









GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS  
(RAILWAY BOARD)

Report by the Railway Board  
ON  
INDIAN RAILWAYS  
FOR  
1948-9  

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Volume I  

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1949



# PRINCIPAL STATISTICS OF RAILWAY OPERATIONS DURING 1947-8 and 1948-9

## I.—ALL INDIAN RAILWAYS

Items	Classes I, II and III (including E. P. and Assam Railways and N. G. of E. I. Railway)			Indian Government Railways (including E. and Assam Railways and N. G. of E. I. Railway)		
	1947-8	1948-9		1947-8	1948-9	
Gross earnings (crores) Rs	183.69	233.83		166.23	214.77	
Total Working ex- (crores) Rs	*163.94	183.88		151.83	189.63	
Operating ratio . per cent	*89.25	78.64		91.40	78.98	
Number of passen- (millions)	*1,043.05	1,190.60		929.08	1,081.35	
gents originating						
Passenger miles . (millions)	*33,649.09	38,764.99		30,086.47	35,128.66	
Earnings from (crores) Rs	*73.27	92.91		65.10	83.91	
carriage of passen- gers						
Average earnings per Pies	4.18	4.60		4.18	4.59	
passenger mile.						
Freight tons origina- (millions)	73.46	82.58		65.69	74.42	
ting						
Freight ton miles (millions)	*20,399.26	22,743.16		19,250.99	21,639.83	
Earnings from (crores) Rs	*86.34	112.26		79.18	104.18	
carriage of goods.						
Average earnings per Pies	8.13	9.47		7.90	9.24	
freight ton mile.						
Total train miles (millions)	157.01	167.61		139.69	150.10	
Gross earnings per Re.	11.70	13.96		11.90	14.81	
train mile						
Working expenses per Re	*10.44	10.97		10.88	11.30	
train mile						
Net earnings per train Re.	*1.26	2.99		1.02	3.51	
mile.						
Net earnings per mean Re.	7.919	14.615		5.440	16.933	
mile worked.						

\* Revised figures.

## II.—INDIAN GOVERNMENT RAILWAYS

(The figures include statistics of worked lines of Indian Government railways but exclude Indian Government portions worked by the Jodhpur and His Exalted Highness the Nizam's State Railways and E. P. and Assam Railways and N.G. of E. I. Railway.)

Items	1938-9 (Pre-war)	1939-40	1941-5	1945-6	1946-7	1947-8	1948-9	
Gross earnings (crores) Rs.	73.98	77.63	162.38	160.40	149.45	157.42	197.82	
Total Working ex- (crores) Rs.	47.49	48.04	99.93	108.10	117.88	142.02	152.78	
Operating ratio . Per cent.	64.18	61.83	65.58	67.39	78.89	90.79	77.35	
Number of passen- (millions)	355.26	349.05	597.02	675.39	752.03	902.26	974.93	
gents originating.								
Passenger miles . (millions)	12,588.13	12,321.12	24,917.30	27,518.35	27,910.13	29,012.67	31,840.91	
Earnings from (crores) Rs	20.41	20.10	49.82	56.45	57.46	62.23	75.33	
carriage of passen- gers.								
Average earnings per Pies	3.11	3.13	3.84	3.94	3.95	4.12	4.54	
passenger mile.								
Freight tons origina- (millions)	64.91	68.87	69.29	70.72	67.23	63.90	69.76	
ting.								
Freight ton miles (millions)	17,056.49	18,351.46	21,175.36	21,975.45	20,689.95	18,962.53	20,714.50	
Earnings from (crores) Rs.	48.82	52.16	77.21	78.81	72.63	73.31	97.92	
carriage of goods.								
Average earnings per Pies	5.46	5.45	7.00	6.69	6.74	7.63	9.03	
freight ton mile								
Total train miles (millions)	135.28	137.45	119.00	127.63	134.29	134.70	137.91	
Gross earnings per Re.	5.46	5.65	12.81	12.57	11.13	11.69	14.32	
train mile								
Working expenses per Re.	3.51	3.50	8.40	8.47	8.78	10.61	11.03	
train mile.								
Net earnings per train Re.	1.96	2.15	4.41	4.10	2.35	1.08	3.24	
mile.								
Net earnings per mean Re.	11.212	12.550	23.030	22.947	13.631	6.256	19.025	
mile worked.								



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# CHAPTER I

## GENERAL

**1. General features of the year.**—The year under review was the first complete year of working for Indian Railways after the Partition. The conditions which prevailed towards the close of the previous fiscal year contained certain elements of uncertainty resulting from the post partition economic readjustments, and these delayed the complete solution of the transitional problems left over by the war. These adjustments abated gradually and stability was progressively attained in 1948-9 with increased industrial activity. There was also a steady recovery in railway operational efficiency. The principal features of 1948-9 from the point of view of Indian Railways were the maintenance of high levels of traffic, upward trends in earnings, and the reduction of transport shortages.

Railways operations are only a reflex of the general economic activity of the country. The year from this point of view proved on the whole satisfactory. Although the agricultural situation during 1948-9 recorded a slight decline in both area and yield under major crops, this was offset by the rise in industrial production, resulting in increased output in most industries. Only coal and steel, among the major industries, recorded a decrease. But in spite of a reduction in raisings, coal despatches during the year substantially exceeded the total for 1947-8. Foreign trade also recorded gains. The physical volume of imports, expressed as a percentage of the pre-war level of 1935, touched 96.3 in 1948 against 82.2 in the previous year.

The volume of exports stated in the same percentage relation to the pre-war year increased from 66.2 to 67.7 in 1948. Perhaps the most satisfactory feature of the year was the improvement in the general labour situation in the country. The number of industrial disputes as compared with the previous year declined by 30 per cent, while the working days lost to industry were reduced by more than 50 per cent.

These economic developments were mainly responsible for the improved results of working during 1948-9. New records have been established under a number of items—the number of passengers, passenger miles, passenger earnings, and goods earnings—and accounted for the more satisfactory financial results of the year. There was a reassuring drop in the operating ratio of the Indian Government Railways from 91.40 to 78.98 during 1948-9. These achievements were made possible principally because of the sustained efforts on the part of the Railways to attain greater efficiency in operation and consequently increased ability to handle the additional traffic. This is shown by the wagon loadings which, during the closing months of the year, showed a steady curve of increase. Complaints of bottlenecks in transport became infrequent in sharp contrast to those at the beginning of the year.

The main features of railway operation as reflected in the statistics of the year are briefly referred to in the general review of working in the succeeding paragraphs.

**2. General review of working.**—As compared with 1947-8, there was during 1948-9, a general increase in the traffic handled, both passenger and goods. Excluding the figures of the Assam and Eastern Punjab Railways for proper comparison, the earnings from passengers on all Indian Railways increased by 19.8 per cent and the earnings from goods traffic by 23.5 per cent. The increase in earnings was due partly to the additional traffic handled and partly to the effect of changes in rates and fares.



The volume of goods traffic during the year on Class I Railways, excluding the Eastern Punjab and Assam, stated in terms of net ton miles, showed an increase of 0.1 per cent over the preceding year. As compared with 1938-9, however, there was an increase of 21.5 per cent. An analysis of the movements during the year shows the composition of goods to be 43.0 per cent under coal, 10.9 per cent under foodgrains and pulses, 2.5 per cent under oilseeds and 43 per cent under 'other commodities'. In 1947-8, coal accounted for 45.9 per cent, foodgrains, pulses and oilseeds combined for 11.7 per cent and other commodities for 42.4 per cent. Thus, the change in the composition of the traffic from the lowest-rated group, coal, to the commodities included in the other two higher-rated groups, together with the effects of the revision of goods rates structure, has helped to increase the average amount earned per ton per mile from 7.74 pice in 1947-8 to 9.18 pice in 1948-9.

Turning to the operating aspect, Indian Railways during the year have on the whole done better than they did in 1947-8. Taking the Class I Railways (excluding the Bengal Assam, North Western, Assam, Eastern Punjab, and East Indian, narrow gauge), the performance during 1948-9, shows improvement under several factors of working.

The train mileage run during 1948-9 records an increase of 2.27 million or 1.69 per cent over the previous year, touching almost the figure for 1938-9. The train mileage on goods services exceeded the pre-war level by 3.73 per cent. Though the passenger train mileage was still short of it by 2.84 per cent, it should be stated that it has been possible to add 2,235,000 train miles for passenger services during the year under review.

During the year, there has been an appreciable improvement in the punctuality of passenger trains. Another important development assisting passenger service was the introduction of new classes of passenger transportation with effect from 1 January 1949, referred to in detail in Chapter IV of this volume.

As regards goods services, greater efficiency in performance is shown under several operating averages. As compared with 1947-8, the net freight carried per goods train increased by 47 tons or by 11 per cent on the broad gauge. The transportation effected by wagons per day, as shown by the net ton mileage per wagon day, was 6.3 per cent higher on the broad gauge and 10.5 per cent higher on the metre gauge.

The average number of engines in use daily during 1948-9 rose by 4 per cent on the broad gauge and by 5 per cent on the metre gauge as compared with 1947-8. The work performed by locomotives also reflects a general improvement. The percentages of broad gauge engines under or awaiting repairs showed a slight increase from 20.2 to 20.8, but on the metre gauge, there has been a decrease from 19.9 to 17.9.

**3. Railways and the Legislature**—The Railway Budget for 1949-50 as approved by the Standing Finance Committee for Railways, was presented to the Constituent Assembly (Legislative) on 15 February 1949. The General Discussion on the budget proposals took place in the House on 18 and 21 February 1949. The vote on the demands for grants was taken on 22 and 23 February 1949.

The discussion covered a variety of subjects. The more important of these related to the revised need for 1 January 1949, need for booking of accommodation for long-distance passengers, provision of increased amenities for Class III passengers, establishment of a coach-building factory, efficiency of railway





**6. Local Railway Advisory Committees.**—Meetings of the Local Advisory Committees totalled 55 during 1940-9 as compared with 58 during the previous year. The members of these Committees were kept fully informed of all important problems affecting passenger travel. Their recommendations were given the fullest consideration, and action was taken on them as far as possible.

The subjects discussed at the meetings of the Local Advisory Committee covered a wide range of important items of public interest. A good many of these pertained to the needs of the travelling public. Among the subjects of general interest discussed at these meetings, the following may be mentioned :—

- (a) time tables and train services;
- (b) ticketless travel,
- (c) catering—periodical revision of charges and inspection by railway doctors of foodstuffs offered for sale to the travelling public,
- (d) lighting arrangements in trains and at stations,
- (e) opening of train halts, looking windows and city looking offices;
- (f) amenities for Class III passengers,
- (g) reservation of accommodation,
- (h) safety of passengers during night journeys,
- (i) arrangements for supply of drinking water to railway passengers,
- (j) allotment of priority and supply of wagons,
- (k) sale of literature at railway bookstalls,
- (l) provision of 'vestibuled coaching stock' on trains,
- (m) post-war reconstruction programme, and
- (n) claims for compensation.

**7. Amenities for the public.**—The steps taken during the year towards making rail travel more comfortable are referred to in greater detail in Chapter VIII.

Overcrowding persisted, although in a somewhat less acute form, and the following measures were taken with the object of removing some of the causes of overcrowding on long distance journeys of 300 miles or over :—

- (a) additional booking office windows were opened for the issue of tickets to long distance passengers and to passengers travelling to out-of-the-way places only;
- (b) at important starting stations complete Class III Logies were set apart in each long distance mail or express train, exclusively for the use of long distance passengers, and
- (c) special travelling ticket examiners were appointed to travel in the carriages set apart for long distance passengers, the object being to prevent short distance passengers from entering into these carriages either at starting stations or *en route*.

From all indications, these arrangements appear to have been well received by the public.



The total number of staff of all grades (gazetted and non-gazetted) employed on the open lines of Indian Government Railways, including Assam and Eastern Punjab Railways, increased from 825,031 on 31 March 1918 to 838,412 on 31 March 1919. The total number of staff of all grades (gazetted and non-gazetted) employed on constructions decreased from 4,115 to 1,326. The total cost of the staff, was Rs. 78,36,71,671 an increase of Rs. 15,32,42,308 over the figure for the preceding year. The increase in the number and/or cost, as the case may be, of staff reflects mainly the effects of the implementation of the recommendations of the Central Pay Commission with retrospective effect, the setting up of organizations on railways for implementing the Adjudicator's Award, the payment, as a result of the recommendations of the Railway Grainshops Enquiry Committee, of more dearness allowance and certain lump sum amounts in lieu of grain-shop concessions to staff who elected for the full dearness allowance in cash, and the increase in the rates of dearness allowance.

At the close of the year, there were in all 559 grainshops, of which 448 were static and 141 mobile. The number of ration card holders who purchased foodstuffs, etc., at these shops at the close of the year was 613,000, of which 413,000 were at concessional rates and 200,000 at controlled rates. The loss incurred in affording relief in kind to the staff was approximately Rs. 25.8 crores. This is equivalent to an average relief of about Rs. 21.3 per ration card holder during March 1919 as against Rs. 22.4 during the previous year.

The number of canteens providing light refreshments to workers and, in some cases, cooked meals increased from 26 to 52 in the year under report and the number of staff who patronized these canteens was on an average of 53,000 per day.

The rates of dearness allowance admissible to staff drawing basic pay of Rs. 250 and below were increased by Rs. 10 per mensem, in the case of staff who elected for the full dearness allowance in cash, while, in the case of Railway staff availing themselves of the grain-shop concessions, an increase of Rs. 5 per mensem in the rates of dearness allowance was sanctioned, the increased rates taking effect in both cases from 1 January 1919.

**9. Security measures on Railways.**—In 1918 there were about 5,100 all ranks in the Railway Protection Police on the Eastern Punjab, East Indian, Oudh Tirhut, Bengal Nagpur, Assam, Great Indian Peninsula, and Bombay, Baroda and Central India Railways. At the suggestion of the Bombay, Baroda and Central India Railway, and with the concurrence of the Government of the United Provinces, the Railway Protection Police force in the United Provinces' portion of that railway was disbanded in May 1918. By 1919, there were thus about 4,500 all ranks in this force on the remaining six railways mentioned above.

Railways continued to give full attention to the fitting of security devices in compartments and to the maintenance of such devices in good working order.

**10. Publicity and Public Relations.**—The Public Relations Branch maintained close contacts with other Departments of the Central Government, with the press, and the trading community. Press communiques were issued from time to time, regarding the decisions of the Government on important railway matters of interest to the public. Public reactions on the problems and activities of railways were carefully studied. While legitimate and constructive criticism was passed on to the Directorates concerned for remedial action, uninformed or unfair criticism was contradicted or otherwise suitably dealt with.

A conference of the Public Relations Officers was held from 31 December 1918 to 4 January 1919 in Calcutta in order to co-ordinate the efforts of Administrations in building up the goodwill of the public for the Railways. The conference discussed the outlines of a country-wide publicity campaign, which was later launched on all the Government Railways in February 1919.



*Assam Railway.*—As a result of heavy storms during April 1918 and February-March 1919, a record rise in the Brahmaputra and heavy rainfall, some of the buildings, bridges and track, etc., on the Assam Railway, suffered considerable damage. The more important items to which reference may be made are staff quarters on the Sapatgram section and at Amingaon, Badarpur and Lunding stations, some bridges on the Golaagang-Amingaon, Tangla-Harisanga, Rowta Bagan-Majbat and Chaparmukh-Silghat sections, and major slips and bank subsidences, etc., on the Badarpur-Lunding and Rangiya-Rangapara sections. Communication remained interrupted on certain sections for varying periods, in some cases for as long as 10 to 19 days. Transhipment was arranged wherever practicable. The total cost of repairing the damages amounted to about Rs. 3,59,000.

*Bombay, Baroda and Central India Railway.* A cyclone of very severe intensity struck the city of Bombay and its suburbs on 21 November 1918, causing extensive damage to tele-communications, power distribution wires, signals, railway lines, bridges, and staff and service buildings in and around Bombay. Traffic between Churchgate and Bulsar remained interrupted for two days in consequence. The approximate cost of repairs was Rs. 3,29,000.

On the metre gauge section, in consequence of the line having been washed away in a number of places in July 1918, on the Khandwa Chitorgarh section, and in October on the Bhatinda-Fazilka section owing to a breach in the Fazilka Distributory, communication was interrupted for a day and a half in each case. The approximate cost of repairs was about Rs. 10,000.

*East Indian Railway.*—On the East Indian Railway as a result of the rise of water level in the neighbouring rivers, breaches occurred between Krishnapur and Lalga Ghat, and on the Tarighat Branch, resulting in the suspension of traffic for 19 and 26 days respectively during September-October 1918. Floods in the Ganga at Kasbi during September 1918 damaged pier No. 3 of the Malaviya Bridge, and it is proposed to have the pier rebuilt at an estimated cost of about Rs. 8 lakhs. On account of heavy rains in September, the bank between Dinaras and Bechpur settled down at several places. On the Bhakur-Dihra Dun section breaches occurred at 11 places between Harwar and Diowa's stations on 5 August 1918, and traffic remained interrupted for three days. A bridge on the Moradabad Chandauli Branch was heavily scoured by floods. On 21 August 1918, a bridge on the Raja-ka Sahaspur-Sambal Hatua Sarai Branch was severely damaged. It was restored as a semi-permanent measure at a cost of about Rs. 1,33,000 and through communication was resumed on 11 May 1919. The total cost of repairing the damages, including the figures separately given above in two cases, amounted to Rs. 10,62,000 approximately. A severe cyclone accompanied by heavy rain visited Tundla and its neighbouring stations on 23 May 1918 damaging the lines of communications, telegraph and signal posts, etc., and resulting in detention to trains up to a maximum of five hours at Tundla. The total cost of the repairs amounted to about Rs. 15,000.

*Eastern Punjab Railway.*—A part of the tunnel between Sonwara and Jabli stations on the Kalka-Simla section collapsed on 16 August 1918 owing to heavy rainfall. Communication remained interrupted for eight days from 22 August 1918. On the Jullunder City-Mukerian section, the track between Dasuya and Mukerian stations breached on 1 August 1918 in three places by heavy rain. Through communication was interrupted for eight days. The approximate cost of repairing the tunnel and the breach as well as of repairing other minor breaches on the Khurdpur-Sham Chaurast Nasrula sections amounted to Rs. 1,15,000.

*Great Indian Peninsula Railway.*—As a result of the cyclone on 21 November 1918 referred to earlier, power failure on the Great Indian Peninsula Railway, brought the suburban service to a standstill for varying periods on the different sections during 22 to 24 November 1918. Other traffic was also interrupted between Igatpuri and Khervadi on the North East line, and between Bombay and Kalyan, and Kalyan and Vangani, on the South East line. The track subsided between Talegaon and Dehu Road and at Kirkee. The approximate cost of repairs amounted to Rs. 1,75,000.



The total quantity of jute released at the Calcutta Area stations, viz., Kalighat, Chitpur, Ballygunge, Kidderpore Docks, Ultadanga, Cossipore Road during 1945-9 showed a gradual decline in volume, as shown by the following figures.

July to March	Maunds
1946-7	9,832,304
1947-8	6,783,567
1948-9	6,432,423

**Oudh Tirkut Railway.**—No special arrangements had to be made except the provision of through trains between Manihari Ghat and Naksalbari, and Manihari Ghat and Malda Court.

**Jodhpur Railway.**—Through train service between the Dominions of India and Pakistan terminated abruptly on 27 July 1945 with 10 Down at Khokhropar and 9 Up at Munabao. Since then through communication has been under suspension and booking restricted beyond Munabao, the last border station on the Indian side. Thus both passenger and goods traffic between the two Dominions is at a standstill, except that some traffic in passengers and cotton seeds and cement moves between Munabao and Khokhropar by road. Traffic so brought to Munabao is booked to destinations in India.

**16. Implementation of decision for division of rolling-stock.**—The reconstituted Stores Sub-Committee (Railways), consisting of representatives of the Indian and Pakistan Governments for the purpose of finalizing the arrangements for the division of rolling-stock in accordance with the Radcliffe Award, met on 15 August 1947. The Committee considered the rolling-stock of the Bengal Assam and North Western Railways stock to be received by India and Pakistan respectively out of the old Bengal Assam and North Western Railways stock was decided at these meetings. Balancing Committees were set up to work out the individual numbers of the stock by equitable age groups. Decision was also taken in the matter of division of rolling-stock on order as well as under construction on 15 August 1947. There were, however, one or two points over which no agreement could be reached and these were left over for further discussion at a meeting of the Committee to be held in May 1949. By 31 March 1949 considerable progress had been made on the Eastern Punjab and North Western, and the East Indian, Assam and Eastern Bengal Railways in the matter of implementing the agreed decisions of the Departmental Sub Committee.

**17. Effect of partition—absorption of India-opted staff of the old Bengal Assam and North Western Railways.**—On the partition of India, about 60,000 India-opting employees of the old Bengal Assam and North Western Railways had to be found postings on Indian Government Railways. Because of the disturbances, the transfers could not be carried out in an orderly manner and the staff had to come away *en masse* from Pakistan areas. The staff were distributed on Indian Government Railways as follows:—

Railway	No. of employees
(1) Eastern Punjab	11,510
(2) Bombay, Baroda and Central India	2,815
(3) Great Indian Peninsula	1,638
(4) East Indian	17,017
(5) Assam	18,170
(6) Bengal Nagpur	8,557
(7) Oudh Tirkut	2,165
(8) Madras and Southern Mahratta	17
(9) South Indian	11
TOTAL	59,000

An advance of two months' pay had been sanctioned to the staff to enable them to carry out the transfer. But because of the disturbances, a good number of them had to leave all their belongings in Pakistan. In order to enable them to tide over their immediate difficulties, a rehabilitation advance was sanctioned equal to three months' pay and returnable in 36 instalments.



The large-scale transfer of staff raised a number of problems on Indian Government Railways. The staff had to be fitted into appropriate positions *vis-à-vis* those of the existing staff of the Railways, and this problem was complicated by the fact that the grades on all the Railways were not uniform. As there were a large number of India-opting staff and the vacancies caused by the departure of Pakistan-opting staff were not enough to accommodate them, it was decided to absorb the staff in their substantive grades, reverting, if necessary, any existing staff of the Railways who had been officiating in these posts. Their claims for officiating in higher grades were required to be considered along with those of the existing staff of the Railways. For this purpose, combined seniority lists had to be drawn up and instructions were issued to this effect in August 1948.

Another difficult problem was that of obtaining the service records and provident fund accounts of the staff who came from Pakistan. As it was anticipated that there might be considerable delay in seeking out and forwarding all the records, instructions were issued early in 1948 for reconstructing the service records on certain *ad hoc* formulae, supplemented by affidavits furnished by the staff. This procedure could not, however, be adopted in the case of provident fund accounts. Meanwhile, a number of such staff had retired or were due for retirement, and were anxious to obtain their provident fund money. Special arrangements were made in the last quarter of 1948 for the quick transfer of their accounts, and, by the beginning of 1949, almost all accounts had been received. The rate of transfer of service records has not, however, been equally satisfactory, and even now about 14,000 records are outstanding.

**18. Change in open miles owing to partition—handing over of Jodhpur-Hyderabad section to Pakistan.**—Partition of the country into the Dominions of India and Pakistan affected only three railway systems, *viz.* North Western, Bengal Assam, and Jodhpur Railways. The North Western Railway had a mileage of 6,881½ before partition, of which 1,855½ miles fell within the Indian Dominion and 5,026 miles in Pakistan. Of the 3,555 miles of the Bengal Assam Railway, 352 miles of B. G., 17 miles of N. G. and 1,573 miles of M. G. fell within India and 1,613 miles in Pakistan. The Sind section of the Jodhpur-Hyderabad Railway, a length of 319 miles of M. G. fell entirely within Pakistan.

**19. Loss of man-days as a result of strikes.**—The total number of man-days lost as a result of strikes in workshops, running sheds and other similar establishments on Indian Government Railways during 1948-9 was approximately 0.2 per cent of the total number of man-days worked. The number of man-days worked during the year totalled 121,789,498 and the man-days lost owing to strikes amounted to 220,103.

The details of the total number of man-days worked during the year and the number of man-days lost by railways in consequence of strikes are summarized in the following table.

NUMBER OF MAN-DAYS WORKED AND LOST THROUGH STRIKES DURING 1948-9

Railways	No. of man-days worked	No. of man-days lost owing to	
		Legal strikes	Illegal strikes
Assam	8,024,473	Nil.	38,360
Bengal Nagpur	5,838,000	"	57,097
Bombay, Baroda & Central India	7,974,818	" 8	7,971
East Indian	55,098,698	Nil.	13,011
Eastern Punjab	14,669,110	"	100
Great Indian Peninsula	13,670,549	" 4,785	42,220
Madras & Southern Mahratta	6,211,188	Nil.	3,146
Oudh Tirhut	6,167,393	"	8,613
South Indian	4,140,769	"	44,786
<b>TOTAL</b>	<b>121,789,498</b>	<b>4,793</b>	<b>215,310</b>

## CHAPTER II

### FINANCIAL RESULTS

#### 20. Monsoon Conditions and Agricultural Situation, 1948-9.—

Before proceeding to examine the financial results of Indian Railways for 1948-9, a reference may be made to two important factors affecting the volume of traffic handled, namely, the agricultural situation and the foreign sea-borne trade during the year.

Although the south-west monsoon started during the year a little later than usual, the country as a whole received satisfactory rain during the monsoon period. The only exceptions were the United Provinces and Gujarat, the former having excessive rains, and the latter a complete drought. Rainfall was normal afterwards, except in November when many parts of the country, especially parts of Assam, West Bengal, Orissa, Chota Nagpur and the Deccan, had untimely rains. Taking the year as a whole rainfall was in excess of the normal in the United Provinces and south Hyderabad. It was deficient in Gujarat and west Rajputana. In all other parts of the country it was normal.

Final forecast figures of area and yield for all the crops for 1948-9 are not yet available, but the data so far published point to a general decline in both the area under, and the yield of, the principal crops. The decline is more pronounced in the case of commercial crops like cotton, sugarcane, sesamum and linseed. The main reasons for the decrease have been excessive rains and floods in the United Provinces, complete drought in Gujarat and Saurashtra, and unfavourable weather conditions at the time of sowing in the Central Provinces and Berar, Hyderabad and Madras. An appreciable increase in acreage has been recorded under gram, reflecting the effects of prevailing high prices in the Central Provinces and Berar, favourable weather conditions in the Central Provinces and East Punjab and progress in rehabilitation of refugees in Patiala and East Punjab States Union. There was a significant increase in the acreage and yield of jute owing to favourable weather conditions at sowing time in Assam, Bihar and West Bengal, and the cultivation of 66,420 acres of waste and other lands on which no crop was grown in the jute season during the previous three years.

According to the information available the percentage variations in the acreage and yield under the principal crops, as compared with the previous year, are as shown in the following table.

VARIATIONS IN ACREAGE AND YIELD OF PRINCIPAL CROPS  
(Increase or decrease per cent. in 1948-9 over 1947-8)

Crop*	Acreage	Yield
Rice (final)	- 0.6	7.7
Wheat (second)	- 5.0	
Ragi (first)	- 5.8	
Gram (first)	+ 7.9	
Jowar (second)	- 3.4	20.0
Bajra (first)	- 6.7	
Maize (first)	- 9.5	
Barley (first)	+ 2.8	
Sugarcane (final)	- 9.9	14.1
Sesamum (supplementary)	- 10.1	18.0
Castor seed (final)	- 0.6	7.0
Groundnut (final)	- 9.9	- 9.0
Bape and mustard (second)	- 3.8	.
Linseed (second)	+ 0.8	.
Cotton (fourth)	+ 2.6	- 17.8
Jute (final)	+ 11.75	+ 11.05

\* The character of the forecast is indicated within brackets.

† Data for Kashmir are not available.

**21. Trade Review.**—The improvement noticed during the last four years in the foreign sea-borne trade of India was fully maintained during 1948-9. Both imports and exports registered further increases as compared with the figures of the previous year.

The total value of imports of foreign merchandise rose from Rs. 399 crores in 1947-8 to Rs. 518 crores during the year, representing an increase of Rs. 119 crores, or 30 per cent. The improvement is to be ascribed mainly to larger imports of grain, pulse, and flour (mainly wheat and rice), cotton raw and waste, machinery including belting for machinery, chemicals, cotton and woollen yarns and manufactures, artificial silk yarn, metal and manufactures thereof, vehicles excluding locomotives, etc., for railways, mineral oil other than kerosene oil, fruits and vegetable, electrical instruments, teak-wood and cloves. Decreases occurred under unset precious stones and pearls, kerosene oil, dyes and colours, glass and glassware, drug and medicines, and tobacco.

The total value of exports increased from Rs. 397 crores in 1947-8 to Rs. 415 crores in 1948-9, recording an increase of Rs. 20 crores, or 5 per cent. The main factors responsible for the increase are larger shipments of cotton piecegoods, jute bags and cloth, black tea, coal, groundnut oil, cashew kernels, unmanufactured tobacco, tanned or dressed skin and turmeric. There were, however, decreases under raw cotton, seeds (including nuts for oil), raw hides and skins, tanned or dressed hides, raw jute, raw wool, and pepper. But these decreases were more than offset by the larger exports under the items enumerated above.

The total value of re-exports, however, declined from Rs. 7.84 lakhs in 1947-8 to Rs. 7.29 lakhs in 1948-9, a drop of Rs. 59 lakhs or 7 per cent. The decrease was primarily due to reduced shipments of vehicles (excluding locomotives, etc., for railways) notwithstanding an increase under cotton piecegoods.

#### A.—FINANCIAL RESULTS OF INDIAN GOVERNMENT RAILWAYS (INCLUDING WORKED LINES).

**22. Financial results of working.**—The gross traffic receipts of the Indian Government Railways, including worked lines for the year 1948-9 amounted to Rs. 213.10 crores. The ordinary working expenses during the year were Rs. 160.41 crores and the appropriation to the depreciation fund was Rs. 11.29 crores. Payments to worked lines as their share of net earnings amounted to Rs. 1.62 crores. The result of miscellaneous transactions was a net receipt of Rs. 2.56 crores. The net revenue for the year came to Rs. 42.34 crores. The interest charges amounted to Rs. 22.36 crores. There was, thus, a surplus of Rs. 19.98 crores, of which Rs. 7.34 crores were paid to the General Revenues and a sum of Rs. 84 lakhs was credited to the Railway Betterment Fund. The balance of Rs. 11.80 crores was transferred to the Depreciation Fund.

**23. Traffic Receipts.**—The total traffic receipts of the Indian Government Railways, excluding worked lines, amounted to Rs. 208.78 crores. The details are shown in the subjoined statement. For purposes of comparison with the previous year, the figures included in the Report for 1947-8 have been adopted in this Volume and they continue to be provisional as the pre-partition accounts have not so far been closed for want of the accounts of the late Bengal Assam and North Western Railways from the Pakistan authorities.

# EARNINGS AND NET TRAFFIC RECEIPTS *Indian Government Railways*

	In crores of rupees	
	1917-8	1918-9
Passenger earnings . . . . .	161.12	83.83
Other coaching earnings . . . . .	15.34	18.83
Goods earnings . . . . .	81.15	108.11
Sundry earnings . . . . .	3.44	4.09
Suspense . . . . .	-3.20	-1.94
<b>Total</b> . . . . .	<b>163.13</b>	<b>213.10</b>
<b>Less—Earnings of worked lines</b> . . . . .	<b>3.28</b>	<b>4.32</b>
<b>Net traffic receipts</b> . . . . .	<b>159.85</b>	<b>208.78</b>

Taking all Class I Railways together, the distribution of passenger earnings by various classes in 1918-9 was as follows—

## PASSENGER EARNINGS BY CLASSES *Class I Railways*

	In lakhs of rupees 1918-9	
	for nine months	for three months
First class . . . . .	1.82	
Air conditioned . . . . .		2
Second class . . . . .	8.30	
Class I . . . . .		1.00
Inter class . . . . .	4.33	
Class II . . . . .		1.90
Third Class . . . . .	57.47	
Class III . . . . .		16.94
<b>TOTAL</b> . . . . .	<b>63.91</b>	<b>19.86</b>

The details of traffic earnings of individual railways are given in Statements 3 and 6 of Volume II of this Report. The working expenses of each railway are given in Statements 3 and 7 of Volume II of this Report.

**21. Working expenses.**—The working expenses of each railway are given in Statements 3 and 7 of Volume II of this Report.

**25. Losses and Gains.**—The statement below compares the net gain or loss of the year on each railway with that of the previous year.

## GAINS OR LOSSES ON INDIAN GOVERNMENT RAILWAYS

	In lakhs of rupees	
Railways	1917-8	1918-9
Assam . . . . .	-1.22	-3.48
Bengal Nagpur . . . . .	-4.80	-1.09
Bombay Baroda and Central India . . . . .	2.09	8.02
Darjeeling Himalaya . . . . .	...	14
East Indian . . . . .	-8.18	11
Eastern Punjab . . . . .	55	148
Great Indian Peninsula . . . . .	66	770
Madras and Southern Mahratta . . . . .	8.25	211
Oudh Tirhut . . . . .	-5.75	55
South Indian . . . . .	8.80	224



The tonnage of goods carried increased by 6.2 million tons or about 8.69 per cent, and each ton was carried on an average a distance of 280.1 miles as compared with 280.5 miles during 1947-8. Net ton miles, on the other hand, registered an increase of 1,712 millions or 8.52 per cent over last year.

The increased earnings were derived mainly from the following commodities: fuel, oil fuel, firewood and other fuel, rice not in the husk, gram and pulses, wheat, marble and stone, salt, sugar, refined and unrefined, wood, unwrought, oilseeds, cotton raw pressed, petrol (in bulk), cement, cotton manufactured, fodder, fruits and vegetable fresh, *gur*, jaggery, molasses, jute raw, iron and steel wrought, tobacco, provisions and other commodities, livestock, and railway materials. Decreases were substantial in fuel for foreign railways and home line constructions, jowar and bajra, and military traffic.

The principal variations in goods traffic on some railways are shown below:—

VARIAIONS IN GOODS TRAFFIC IN 1948-9 AS COMPARED WITH 1947-8

Railways	Figures in thousands	
	Variations in 1948-9 as compared with 1947-8	
	Tons carried	
Bombay Nagpur . . . . .	-	540
Bombay, Baroda and Central India . . . . .	+	17
East Indian . . . . .	+	5,460
Great Indian Peninsula . . . . .	+	757
Madras and Southern Mahratta . . . . .	+	113
Oudh Tirhut . . . . .	+	217
South Indian . . . . .	+	301

Detailed statistics of goods traffic will be found in Summary X, Statements Nos. 13, 20 and 36 respectively of Volume II of this Report

31. Measures relating to statistics and statistical organization.—

Soon after partition, certain documents relating to inter-railway transactions became unavailable and statistical work on railways received a serious setback, resulting in considerable accumulation of arrears. Steps were taken during the year for pulling up the arrears and for timely compilation and issue of returns. Improvement as the result of the action taken was realized only in the following financial period.

During the year under review, two meetings of Statistical and Compilation Officers were held. One was at Bangalore in August 1948 with the Financial Commissioner, Railways, presiding. The other was at Delhi, in January 1949, with the Chief Operating Superintendent, East Indian Railway, as Chairman. At these meetings the difficulties experienced by railways in the prompt collection and accurate compilation of statistics on a uniform basis were discussed. Reference should also be made of the periodical meetings of operating heads of Railways with the Member, Transportation, Railway Board, presiding. At these meetings special attention was given to the results of operating efficiency.

Individual railways took also various special measures to promote better study and utilization of railway statistics. Thus, on the Madras and Southern Mahratta Railway, a graph room was opened at the headquarters exhibiting over a hundred graphs showing daily, periodical and monthly figures of performance. It was open to officers and subordinates of all departments who were specially invited to inspect and study the graphs. Similar arrangements for the exhibition of important results had been made during the year by the Bengal Nagpur Railway also. Proposals for similar chart rooms were under way on the South Indian and certain other railways. Another important proposal under active consideration during the year was the training in statistics of probationary officers and staff on railways.

## CHAPTER III

### NEW CONSTRUCTION AND ENGINEERING WORKS

**32. Capital Expenditure.**—At the end of March 1949, the total capital-at-charge of all railways including lines under construction amounted to Rs. 775.77 crores, of which Rs. 701.89 crores was the capital-at-charge of Indian Government Railways, inclusive of the premia paid on the purchase of certain companies' lines. The balance of Rs. 73.88 crores represented the capital raised by Indian States, Companies and District Boards.

The figure of capital-at-charge of Indian Government Railways is provisional pending closing of the pre-partition accounts, and comprises the following:—

	£
Liability and debt incurred in the purchase of railways . . . . .	131,164,798
Less liability and debt cancelled by the operation of annuities and sinking funds . . . . .	23,756,284
Net amount outstanding . . . . .	107,408,514
	Rs.
Direct expenditure by Government (in thousands) . . . . .	5,58,67,60
Amount in sterling converted into rupees (in thousands) . . . . .	1,43,21,58*
GRAND TOTAL . . . . .	7,01,89,18

By far the greater portion of this amount, namely, Rs. 6,99,77,74,000, is Government Capital and only Rs. 2,11,44,000 is owned by Indian States, etc.

The total capital outlay on all railways during 1948-9 was Rs. 36.10 crores of which Rs. 34.40 crores related to Indian Government Railways.

The distribution of the capital outlay in 1948-9 over the different Indian Government Railways is shown in the summary below:—

#### CAPITAL OUTLAY ON INDIAN GOVERNMENT RAILWAYS DURING 1948-9

(Figures in lakhs of rupees)

Railways	Open Lines			New Lines			GRAND TOTAL
	Works, etc.	Rolling-stock	Total	Works, etc.	Rolling-stock	Total	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Assam Rail Link Project . . . . .	..	..	..	3,18	..	3,18	3,18
Assam . . . . .	78	3	81	..	..	..	81
Bengal Nagpur . . . . .	83	6	89	3	..	3	92
Bombay, Baroda & Central India . . . . .	2,03	16	2,19	..	..	..	2,19
East Indian . . . . .	10,38	1,32	11,70	76	..	76	12,46
Eastern Punjab . . . . .	1,66	46	2,12	5	..	5	2,17
Great Indian Peninsula . . . . .	4,48	1,83	6,31	89	..	89	7,20
Madras & Southern Mahratta . . . . .	68	..	68	..	..	..	68
South Indian . . . . .	78	14	92	..	..	..	92
Oudh Tirhut . . . . .	1,34	8	1,42	..	..	..	1,42
Darjeeling Himalayan . . . . .	1,10	..	1,10	..	..	..	1,10
Other Indian Railways . . . . .	1,35	..	1,35	..	..	..	1,35
TOTAL . . . . .	25,41	4,08	29,49	4,91	..	4,91	34,40

\* The amounts, £2,575,000, £2,000,000, £1,500,000 and £1,000,000, representing the share capital respectively of the Great Indian Peninsula, Bombay, Baroda and Central India, Madras and Southern Mahratta, and South Indian Railways (the first two amounts being paid off during 1925-6 and 1941-2 respectively, and the last two, during 1944-5) have been converted at the appropriate average rate of exchange for those years, and the balance of £100,333,514 at the rate of 1s. 6d. to the rupee.

**33. Mileage of lines opened or sanctioned in 1948-9.**—No new lines were sanctioned for construction during the year.

The following new lines, representing an addition of 157.62 miles, were opened to public traffic during the year.

**MILEAGE OF LINES OPENED OR SANCTIONED DURING 1948-9**

Railway	Name of line	Mileage	Date of opening
Eastern Punjab	Rupar Talwara	34.37*	9.10.48
Great Indian Peninsula	Restoration of Bhimern Khairi Is line		
	(1) Bhimern Hamirpur Road	29.55	1.0.49
	(2) Yamuna South Bank Bharwa Buzurgpur	6.51	
	(3) Hamirpur Road Yamuna South Bank	7.50	
Nizam's State	Hadgon Road Himayatnagar section of Mudkhed-Adilabad line	11.42	27.11.48
Coastal Trilut	Assam Rail Link Project Conversion from N G to M G.		
	(1) Kisanganj-Thakurganj	31.11	21.6.49
	(2) Thakurganj Naksalbari	20.73	21.7.48
Rajasthan	Kheroda Kanor section of Mavl Jn. Bada Badri Line	15.94	18.4.48
	<b>TOTAL</b>	<b>157.62</b>	

\* This is inclusive of the length of 22.30 miles shown as opened to goods traffic on 2.2.1948 in the preceding year's Report.

**34. Lines under construction during 1948-9.**—Nine new lines were under construction during the year, adding up to a total mileage of 532.14. The details of the lines are shown below :—

**NEW LINES UNDER CONSTRUCTION**

Railway	Name of the section	Mileage under construction
East Indan	Barwadih Barnadih section of Barwadih-Chirimiri (Bijuri) Project	41.28
Gadkwar's Baroda State	Vijapur Ranapur	13.92
	Protaphnagar Dholka	67.30
Jalpur State	Fanganer Malpara Sawai Mangarh	75.68
Nizam's State	Mudkhed Adilabad	100.69 <sup>1</sup>
Oudh Tirhut & Assam	Assam Rail Link Project	145.00 <sup>2</sup>
Rajasthan	Mavl Junction Bada Badri	51.00 <sup>3</sup>
Saurashtra	Fipli Gop	22.61
	Dahmansa Mata	14.60

<sup>1</sup> Out of this, 24.26 miles between Mudkhed and Hadgon Road were opened in 1947-8 and 11.42 miles between Hadgon Road and Himayatnagar were opened in 1948-9.

<sup>2</sup> Out of this, 52.14 miles between Krishanganj and Naksalbari was opened in 1948-9 after conversion from Narrow Gauge to Metre Gauge.

<sup>3</sup> Out of this, 17.65 miles between Mavl Junction and Kheroda were opened in 1947-8 and 15.94 miles between Kheroda and Kanor were opened in 1948-9.



**35. New surveys.**—Five surveys, aggregating about 500 miles, were sanctioned during the year. The most important of these are the Kandla-Deesa-Raniwara, which runs to a total length of 220 miles passing through Cutch and Rajputana, to provide a metre gauge connection to Kandla Port, and the Chamrajanagar-Mettupalayam, a 90-mile line to connect Mysore and South Indian Railway metre gauge system. The Administration undertaking the surveys, the proposed gauge and mileage are shown in the following statement.

#### NEW SURVEYS SANCTIONED DURING 1948-9

<i>Railway</i>	<i>Gauge</i>	<i>Mileage</i>
<i>Bombay, Baroda and Central India.</i>		
(1) Kandla-Deesa-Raniwara . . . . .	3'3½"	220
<i>East Indian.</i>		
(2) Branch lines and sidings for the development of Karanpura Coalfields . . . . .	5'6"	25
(3) Mirzapur-Chopan-Pipri Reconnaissance . . . . .	5'6"	90
<i>Oudh Tirhut.</i>		
(4) Kumarganj-Balurchat . . . . .	3'3½"	45
Kumarganj-Barsoi . . . . .	...	30
<i>South Indian.</i>		
(5) Chamrajanagar - Satyamangalam - Mettupa- layam . . . . .	3'3½"	90
TOTAL . . . . .		500

**36. Lines closed during 1948-9.**—No new lines were closed during the year for commercial reasons.

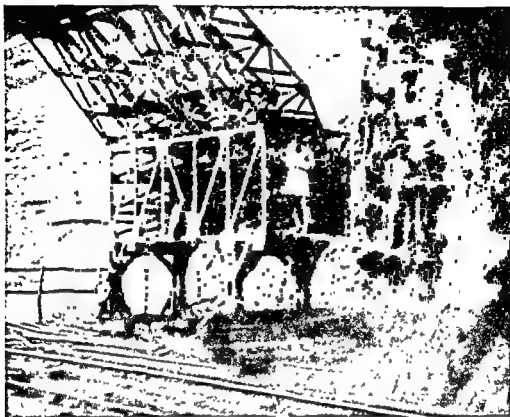
**37. Engineering works.**—Several important works were carried out or sanctioned during 1948-9 for increasing line capacity, improving operational facilities, etc. The more important works are briefly mentioned below.

#### 38. Open line improvements.

(1) *Doubling of the Anand Barejadi Section—Bombay, Baroda and Central India*—(Cost. Rs. 91 lakhs).—Two large streams of traffic bound for Ahmedabad, one from Bombay *via* Baroda and Anand, consisting mainly of machinery, imported goods, and cotton, and the other from the east *via* Godhra and Anand consisting mainly of coal and iron, have to be carried over the Anand-Ahmedabad section. While the 11-mile length between Ahmedabad and Barejadi is a double line, considerable difficulty is felt in dealing with the traffic on the single line section between Anand and Barejadi. Moreover, with the construction of the new Kandla Port in Cutch, this section will also have to carry the traffic from that port to the east *via* Ahmedabad, Anand and Godhra. It was, therefore, considered essential to increase the capacity of the Anand-Barejadi section by providing a double line.

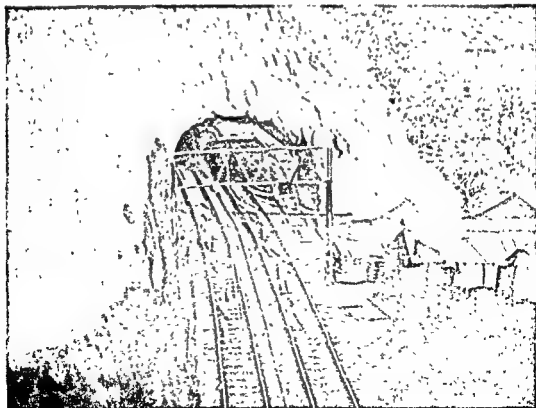
(2) *Additions and alterations to the goods yard at Kotah—Bombay, Baroda and Central India*—(Cost. Rs. 2,17,372).—The existing yard accommodation at Kotah was found to be inadequate to cope with the increase in goods traffic owing to diversion of traffic from Karachi to Bombay. The proposed additions and alterations to the goods yard at Kotah will facilitate quicker movement of traffic.

(3) *Reopening of crossing stations at Kurlasi and Alnia—Bombay, Baroda and Central India*—(Cost. Rs. 2,40,000).—Owing to a considerable increase in the traffic between Bombay and Delhi in consequence of the diversion from Karachi to Bombay, these crossing stations were reopened to facilitate movement.



TUNNEL WIDENING, G. I. P. RAILWAY. CANTILEVER STAGING TUNNEL NO. 22  
BIHIN GHAT, MEN DRILLING THE TUNNEL SIDE PREPARATORY TO BLASTING.

TUNNEL WIDENING, G. I. P. RAILWAY. CANTILEVER STAGING IN POSITION  
INSIDE TUNNEL NO. 13, BIHIN GHAT, FOR WIDENING OF THE TUNNEL ON THE  
'DOWN' SIDE.





(4) *Improvements in Amritsar Yard—Eastern Punjab—*(Cost, Rs. 1,86,000).—It was necessary to carry out certain additions and alterations in the Amritsar yard to provide better operational facilities for the movement of engines and rakes.

(5) *Partial doubling of the Mathura-Delhi Section—Great Indian Peninsula and Eastern Punjab—*(Cost, Rs. 103.65 lakhs).—The Delhi-Mathura Section has been a serious bottleneck to the movement of traffic between Bombay and Delhi and beyond. The position worsened with the partition of India which brought a considerable change in the trend of traffic. The traffic which used to be routed normally via Karachi had to a great extent to be diverted via Bombay, and the traffic between Bombay and Delhi and East Punjab, in consequence, increased considerably. It was, therefore, decided to provide partial doubling on this section in order to increase its line capacity. Out of 43.48 miles proposed to be doubled, 6.75 miles are on the Eastern Punjab Railway and the remaining on the Great Indian Peninsula Railway.

(6) *Improvements to traffic operating facilities on the North East Line between Madras and Vizagapatam—Madras and Southern Mahratta—*(Cost, Rs. 25,01,600).—With a view to equip this single line section to deal with the existing traffic satisfactorily and also the extra coal traffic—diverted by sea—it was decided that additional operating facilities, such as rail level platforms, second loops, etc., should be provided at a number of stations on this section.

(7) *Provision of three crossing stations between Tirupattur and Kankarai, Kankarai and Samalpur, and Sankaridrug and Kalipatti Road stations on the Jalapet-Erode Section—South Indian—*(Cost, Rs. 6,75,000).—In order to prevent delays to movement of trains on this section it was decided to reduce the length of some of the block sections by the provision of crossing stations in between the existing stations.

### 39. Important works sanctioned.

(1) *Diversion track between mile 38/7 P. 7 and mile 40/7 P. 21 on Moradabad-Delhi Branch—*(Cost, Rs. 7,71,215).—The River Ganga formed an embayment dangerously close to the existing approach bank. In order to safeguard the continuity of the line of communications if the river eroded further and cut away the embankment, it was decided to retire the line  $\frac{1}{2}$  mile further away from this river.

(2) *Assisted siding at mile 38/12 between Paradol and Chirimiri stations on the Central India Coalfields Railway to serve Messrs. Central Indian Coalfields Ltd.'s, Sajapahar Colliery—*(Cost, Rs. 5,92,560); *assisted siding on the Sanctoria Branch to serve Messrs. Bengal Coal Co. Ltd.'s Chinakuri Pits Nos. 1 and 2—*(Cost, Rs. 4,60,374).—These sidings were required for the development of coalfields in the areas concerned.

(3) *Provision of siding facilities for the Fertiliser Factory at Sindri near Pathardih (Stage III)—*(Cost, Rs. 16,99,435).—The third and final stage of the work in connection with the provision of the assisted siding for the Fertiliser Factory at Sindri consists of the provision of a marshalling yard between the factory and the station on the main line. Work on Stages I and II, costing Rs. 18,30,332 and Rs. 2,15,496 respectively, had been sanctioned previously.

(4) *Port Arterial Siding, assisted and private siding to serve Messrs. Scindia Steam Navigation Co. Ltd.—*(Cost, Rs. 8,25,978).—This siding was required to assist Messrs. Scindia Steam Navigation Co. Ltd., in the movement of heavy steel material and other equipment expected by them at Vizagapatam in connection with their shipbuilding programme.

(5) *Development of Quarry at Rattamalai, South Indian Railway—*(Cost, Rs. 5,32,772). In order to obtain a steady and adequate supply of granite ballast and rubble required for various works on the railway, it was decided to develop this quarry and work it, utilizing up-to-date mechanical quarrying and stone crushing plant.

(6) *Construction of a bridge across the Ganga at Mokameh, near Patna, East Indian Railway*—(Cost, Rs. 12 crores). All traffic between North and South Bihar, i.e., on either side of the Ganga has at present to be ferried. This constitutes a serious bottleneck even for existing traffic. With the increase in traffic visualized with industrialization, particularly of the Monghyr area, the present method would be totally inadequate. It was, therefore, considered necessary to provide a bridge across the Ganga at Mokameh to facilitate movement of traffic.

The projected bridge will be the longest over the Ganga and will have 15 spans of about 400 feet and a total length of about 6,300 feet. A clearance of 40 feet above mean flood level will be provided to facilitate movement of steamers. The bridge will carry a single line broad gauge track and, if the road authorities so desire, also a 24 feet roadway on the upper deck. Out of the anticipated cost of Rs. 12 crores, Rs. 5 crores will be the portion debitable to the Road Authorities. A special organization under an Engineer-in-Chief for constructing the bridge was formed during the year and preliminary work, e.g., preparation of designs, collection of materials, etc., was put in hand.

#### 40. Bridge strengthening and protection programme.

*Bombay, Baroda and Central India Railway*—(a) Strengthening Girna Bridge at mile 18.6-18.14 (Cost, Rs. 1,09,240). (b) B. G. System—Regirding and reconditioning girders and rebuilding sub-structures of bridges not strong enough to carry 20 ton axle load (NC engine), (Cost, Rs. 1,34,67,000).

(a) On the Girna Bridge, a permanent speed restriction of 10 m.p.h. was enforced as its girders were not strong enough to carry the heavier types of engines. As the bridge is situated on an important section, linking the main lines of the Great Indian Peninsula and the Bombay, Baroda and Central India Railways, it was decided to remove the bottleneck by bringing the bridge up to the requisite standard.

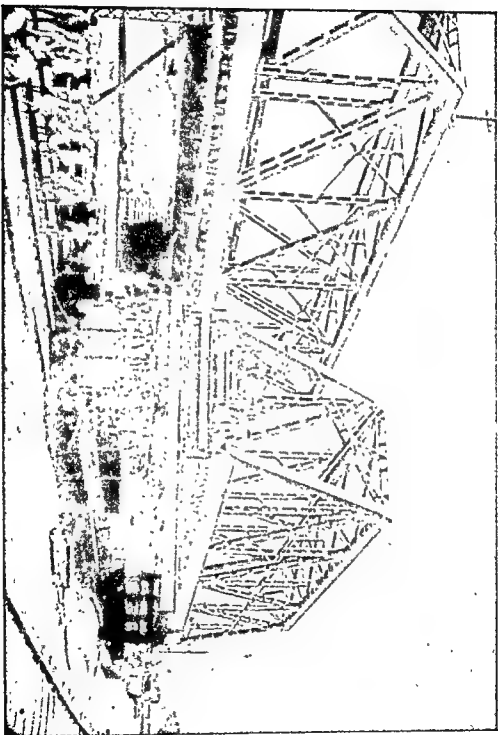
(b) Though the track on the Bombay-Viramgam line and the Baroda-Mathura main line is up to the main line standard and capable of taking the heavier and faster types of engines, most of the girders are either only up to the Branch line standard or weak, and consequently overstressed to the maximum permissible limit. It was, therefore, necessary to replace these girders on these sections as soon as possible.

The abutments and piers of the bridges mainly on the Bombay-Ahmedabad section also required rebuilding. On account of their age, the condition of some of these had steadily deteriorated. In a few cases cracks had developed, and in other cases abutments had tilted forward. Early replacement of such abutments and piers was required on considerations of safety.

*Eastern Punjab Railway*—Rebuilding guide bunds, raising approaches and strengthening of the masonry of piers and abutments of East Beyne girder bridge No. 25 at mile 8-13.14 on Jullundur City-Nakodar section. (Cost, Rs. 4,70,391). This bridge was heavily damaged during the floods in September 1947. The girders were partially submerged in water, the highest flood level being about 2 feet below rail level. It was, therefore, decided to raise the bridge by 4 feet and to rebuild guide bunds, raise approaches, and strengthen the masonry of piers and abutments, to suit the highest flood level.

*East Indian Railway*.—Extension of left guide bank of Ganga Bridge, at Garhmukhtesar—Bridge No. 52 (Cost, Rs. 16,46,131). The existing left guide bank being short, the river developed a serious embayment dangerously close to the railway line. It was, therefore, decided to lengthen the guide bank by 2,000 feet with an armoured curved head.

*Great Indian Peninsula Railway*.—Oalee Bridge—Rebuilding of two piers of 8-30 ft. at mile 517 J near Bankhedi on Itarsi-Jubbulpore Section. (Cost, Rs. 1,44,371). Piers Nos. 2 and 3 of this bridge were damaged by the exceptionally heavy rains in August 1947. The gap of 100 ft. between Piers No. 1 and No. 4 was temporarily spanned to maintain through communication. The piers had to be rebuilt.



REGARDING THE BRIDGE OVER THE LANGUJAYA RIVER AT DUSI—ONE OF THE 150 FT CLEAR SPANS IN TRANSIT IN THE RIVER BED AND PASSING THE FIRST SPAN WHICH HAS BEEN PREVIOUSLY INSTALLED IN THE BRIDGE.



**41. Permanent way renewals and welding of rail joints.**—Some of the important new works, besides the works in progress, which were included in the Track Renewal Programme of the year are referred to below.

(a) *Bengal Nagpur Railway.*—Re-sleeping 23 00 miles corroded steel sleepers (N+3) with C. I. Plate (C. S. T. 9) sleepers (N+2) and Duplex Rail-Tee joint sleepers on the E. C. section.

(b) *Bombay, Baroda and Central India Railway.*—Re-conditioning permanent way between Bombay and Ahmedabad

Replacing C. I. pot sleepers (N+1 density) by C. S. T. 9 sleepers (N+3) density between miles 157-3/4 to 170 and miles 197-3/4 to 199 in the Down line and between miles 246½ to 277 on the main lines on Bombay-Ahmedabad section.

Increasing the density of steel trough sleepers from (N+1) to (N+3) between miles 277 and 309 on Baroda, Ahmedabad section

(c) *East Indian Railway.*—Re-sleeping between Bandel and Bhadrashwar for track circuiting on Howrah Division

Re-sleeping with new C. I. and steel sleepers 51 miles on Asansol Division.

(d) *Great Indian Peninsula Railway.*—Bina - Katni section - Relaying of 80 lbs. FF, IMR track on C. I. pot sleepers with second class 100 lbs B H. 33 ft. cropped rails with new 18" long 'E' type fish plates and fish bolts and nuts, and new keys on C I pot sleepers between miles 702.40 and 733.152 (excluding turnouts), amounting to 30.60 track miles.

Relaying of old 100 lbs. B H. track on timber and pot sleepers with 2nd class 100 lbs. B H. cropped 33 feet long rails with new standard 'E' type 20" long fish plates and new fish bolts and nuts, and new keys on 2nd hand C. I. pot sleepers with 153 lbs. troughs at joints to N+4 density throughout, except in tunnels, rock cuttings and green banks in new diversion where the track was laid on wooden sleepers on Bhore Ghat on Up and Down lines, equalling a length of 29.193 track miles

Relaying of old 100 lbs. B H. track on timber and pot sleepers with 2nd class 100 lbs. B. H. cropped 33 ft. long rails with new standard 20" long 'E' type fish plates and new fish bolts and nuts and new keys on 2nd hand C. I. pot sleepers with 153 lb. troughs at joints to N+4 density throughout except in tunnels, rock cuttings and green banks in new diversion where the track was laid on wooden sleepers on Thull Ghat on Up and Down lines, amounting to 19.42 track miles.

(e) *Welding of rails.*—During the year some welding of rail joints was carried out on a length of 14 miles on Baroda-Ahmedabad section of the Bombay, Baroda and Central India Railway, and about 4 miles on the Grand Chord of the East Indian Railway.

**42. Locomotive Manufacturing Works Project.**—As stated in the report for last year it was decided that the Locomotive Manufacturing Workshop should be located at Mihijam near Asansol in West Bengal. This site has since been renamed as Chittaranjan in memory of the late Deshbandhu Chittaranjan Das.

Out of about 4,000 acres of land required for the project, over 3,000 acres were acquired and taken possession of during the year. Preliminary work was started on the various shops, namely, Light Machine Shop, Pattern Shop, Heavy Machine Shop, etc. The entire workshop will consist of seven shops, covering an area of 760,000 sq. ft. and involving the use of 12,000 tons of steel work.



In addition to the workshop property, work was proceeding on the provision of a township for providing accommodation for locomotive repairmen. The township will consist of three main groups of buildings. It is estimated in regard to layout, scheme, design and equipment that the township will have a comfortable supply of the necessary services and conveniences. A fair sized workshop property for the township will be provided and adequate non-motorised facilities will be available.

With the property, equipment and the necessary tools and machinery, the production of component parts of locomotives is expected to start in 1949.

**43. Wireless communication on railways.** In addition to the wireless communication system which has been established since the inception of the Indian Government Railway, a system of communication is being established for communication during emergencies between the various railways and the heavy congested trunk lines.

*Equipment.* The system of 1949 consists of a programme of development of transmitter type SR 2290 and of type SR 2271 for long range communication by the Board for operation by the railways and also a similar system and can, with proper maintenance and supply of spare parts, be kept in service for emergency use. An order for the purchase of the material to supply eleven new transmitters to make up the deficiency in the number of sets already mentioned to the railways has been placed for the procurement of material of proposed M. 1 equipment.

*Current developments.* Messrs. The Eastern Automatic Co., Ltd., the agent for Messrs. Bendix Corporation of America, have arranged for the supply of type MRI Radi Reed Very High Frequency Radio Equipment 25 watt 160 Mc. for radio telephone communication between the main master, branch and section lines. The spare parts required for this will be installed in the main holding stock at M. 1 stores of the Eastern Indian Railway.

On account of frequent thefts of copper wire and cable, it is necessary to provide better facilities for guarding stores and property are being made to provide radio telephone service to the stations for communication with Kharput, Adra and Chikhalgar and also for communication between Adra and Kharput on the Bengal-Nagpur Railway.

The two new medium power wireless stations at Samastipur and Kishor on the Oudh-Terai Railway are reported to have been installed despite thefts of copper wire in the unprotected place of September 1948, and for maintaining communication on the East P. N. line.

Under the Shipping Act, for purposes of safety of life boat passengers in cases of emergency, wireless communication was required to be established on the two Indo-Ceylon Ferry Steamers, S. S. *Merak* and S. S. *Gadank* plying between Dhanushkott and Tutankor on the South Indian Railway. The supply of wireless sets for this installation is awaited.

To facilitate the work of construction on the Andam Rail Link, Project wireless communication has been provided between the headquarters of the Engineer in Chief at Kurssong and his district offices at Alipinduar, Fakiragram and Siliguri and also between Kurssong and Pambri.

**44. Improvement to line Telecommunication on Railways.** Fairly good progress has been made as regards the Telecommunication and Improvement Schemes carried out by the Postal and Telegraphs Department on behalf of railways. The pending demands for the administrative trunk circuits, deputy and section control circuits and telegraph circuits have to a great extent been completed by the Post and Telegraphs Department and taken over by the railways. The railway administrative trunk lines on the Great Indian Peninsula Railway connecting Bombay with Delhi, and on the South Indian Railway between Trichinopoly and Villupuram have been completed. The lines on the East Indian Railway between Moradabad and Delhi are nearing completion.

*Thefts of copper wire.*—The position with regard to thefts of copper wire has been rather acute on the East Indian, Bengal Nagpur and Oudh Tirhut Railways. The Post and Telegraphs Department have taken these cases up at a fairly high level with the Provincial Governments and, despite the efforts of the Police, this menace still continues. The Post and Telegraphs Department are also endeavouring to minimise the duration of the resultant failures by repairing the damages promptly. These failures, however, continue to cause considerable concern to the Board and the Railway Administrations.

*Public call offices.*—Public telephones for the convenience of passengers have been provided at a number of railway stations.

*Railway Telecommunication Committees.*—Railway Telecommunication Committees consisting of representatives of the Post and Telegraphs Department and the Railways have been established at many centres. Their meetings, which have been held regularly, have brought about commendable liaison and collaboration between the railways and the Post and Telegraphs Department and has tended to improve the efficiency of railway circuits.

*Canalizing of all railway demands for telephone equipment through I. T. I.*—On account of an agreement between the Government of India and the Automatic Telephone and Electric Company Limited of England all telephone equipments including railway control apparatus but excluding manual exchange boards which are manufactured in the Post and Telegraphs Workshops have now to be obtained, subject to certain conditions, exclusively from this firm.



To sum up, while no essential industry was allowed to suffer, as far as transport facilities were concerned, the total demands still continued to outstrip the supply of wagons.

**46. Transport of coal.**—During the year under review, the control and distribution of coal continued as before, through the Coal Commissioner's office under the administrative control of the Ministry of Industry and Supply, Government of India.

The movement of coal from all the coalfields, except Singareni and Talchar, showed an improvement during 1948-9 as compared with the previous year.

The despatches of coal to the Calcutta Docks for onward shipment to various consumers in India and abroad increased very considerably during the year. A record figure of 500 wagons daily was maintained during November 1948 in the loadings for the Calcutta Docks for shipment. The increased movements to the Calcutta Docks saved the much longer movements by the all-rail route.

The wagon position, particularly on the East Indian Railway improved considerably during November 1948, when a daily average of 2,091 wagons was loaded with coal. This is believed to be a record since the introduction of control over coal. This figure could not, however, be maintained in the months immediately following, when traffic in other goods increased markedly.

In February 1949, the Central Board of Transport laid down a minimum guaranteed loading figure of 2,700 wagons per day for coal in the Bengal and Bihar coalfields. The actual loadings, however, exceeded this guaranteed figure during the month of March 1949.

Generally, the movement for coal was comparatively free in most directions. In the case of traffic for stations situated between the coalfields and Moghalsarai and beyond Moghalsarai towards the west the movement had to be regulated on account of breaches and operational set-backs from time to time. The position with regard to the coal traffic for stations on the Oudh Tirhut Railway was also affected, mainly by difficulties in the river ferry.

The several Committees set up by the Ministry of Industry and Supply, such as the Coal Transport Advisory Committee, the Coal Advisory Committee and the Coal Allocation Committee, continued to render useful service in solving day-to-day problems through discussions with the representatives of the various interests concerned.

**47. Movement of certain commodities by special trains.**—As stated in paragraph 48 of the last report, a system of running special trains from certain stations to selected destinations was introduced towards the close of the previous year.

These arrangements were patronized increasingly during the year. A large variety of commodities such as foodgrains, sugar, salt, fodder, cement, textiles, iron and steel, jute, manganese ore, etc., were moved by special trains.

Later, the system, instead of being kept confined to wagon loads was extended to 'smalls', and non-priority goods moved from important centres, principally the ports of Calcutta and Bombay, to important towns in the interior, such as Delhi, Kanpur, Lucknow, Allahabad, Patna, Jabulpore, Nagpur, etc. In many cases, such trains were run on nominated days to scheduled timings assuring delivery at destination within a fixed time.

It is estimated that towards the end of the year, the wagon loads of traffic cleared by such special goods trains on the Broad Gauge system constituted about 12 per cent of the total wagon loadings excluding coal.



The performance during the year as compared with 1938-9 indicates that railways carried 151.5 per cent more passenger traffic with 2.81 per cent less passenger train services, whilst 21.5 per cent more goods traffic was carried with an increase of only 3.73 per cent in goods train miles.

Detailed figures of train miles of Class I Railways are given in Statements Nos. 17 and 32 and those of Class II and III Railways in Statement No. 37 of Volume II of this Report.

**50. Shunting miles.**—‘Other engine mileage’ during 1948-9 was nearly 24 per cent of the total engine mileage (including departmental), which is much the same as during the previous year.

Shunting miles forming the greater portion of the unproductive mileage, amounted to about 16 per cent of the total engine miles. In the following table is shown the ratio per 100 train miles of the passenger and goods shunting miles of Class I Railways during 1948-9 as compared with 1947-8. It will be observed that except in the case of metre gauge goods services there has been a slight increase under all other heads.

SHUNTING MILEAGE DURING 1947-8 AND 1948-9  
*Class I Railways, viz B A, N W, E P and Assam*

Shunting miles per train mile (100)		1947-8	1948-9	Inc. or dec. % over 1947-8
Passenger and proportion of mixed	{ B G	3.49	3.91	+ 3.47
	{ M G	3.21	3.26	+ 0.16
Goods and proportion of mixed	{ B G	40.9	41.7	+ 2.21
	{ M G	45.1	44.6	- 1.11

The principal features of passenger and goods train operation on Class I Railways during the year are reviewed in the following paragraphs.

**51. Passenger trains.**—On the broad gauge, there was an increase of 9.24 per cent in vehicle miles against approximately the same percentage increase in passenger miles. On the metre gauge, however, the increase in vehicle miles was only 3.57 per cent as against an 8.43 per cent in passenger miles.

STATISTICS OF PASSENGER TRAFFIC  
*Class I Railways, viz B A, N W, E P and Assam*

(Figures in thousand ls.)

Particulars	Broad gauge			Metre gauge		
	1947-8	1948-9	Inc. or dec. % over 1947-8	1947-8	1948-9	Inc. or dec. % over 1947-8
Passenger miles	20,437,419	22,768,790	+ 9.27	9,469,112	10,299,978	+ 8.43
Coaching vehicle miles (inc. proportion of mixed)	772,220	779,398	+ 0.92	409,367	422,027	+ 3.57
Passenger train miles* (inc. proportion of mixed)	51,401	52,679	+ 2.10	26,229	27,243	+ 3.87

\* Includes the mileage of trains conveying passengers and of all other traffic booked at coaching rates, and empty mileage run by passenger and other coaching stock. It also includes mileage of electric locomotives and electric multiple unit suburban trains as well as military specials but excludes departmental.

**52. Punctuality of passenger trains.**—Except in the case of suburban electric multiple unit trains on the metre gauge, there was an appreciable improvement in the punctuality of passenger trains especially over the broad gauge.



**56. Goods train speeds.**—The average speed of goods trains was slightly lower on both the broad and metre gauges during 1948-9 as compared with 1947-8 from 10.5 to 10.3 on the broad gauge, and from 9.35 to 9.25 on the metre gauge.

**57. Goods train loads.**—The average net or freight load per goods train (steam) on the broad gauge increased by 47 tons from 423 tons in 1947-8 to 470 tons in 1948-9. On the metre gauge there was a very slight drop from 176 tons in 1947-8 to 175 tons in 1948-9. The East Indian Railway alone accounted for an increase of nearly 101 tons per goods train, viz. from 172 tons in 1947-8 to 373 tons in 1948-9.

**58. Stock usage.**—The average number of engines in use daily on different services on the broad gauge increased by 4 per cent from 3,100 in 1947-8 to 3,209 in 1948-9, but the total engine miles increased only by 2 per cent from 118,902,000 to 120,682,000. This disparity accounts for the drop in the engine user which dropped by 2 per cent from 105 to 103.

A similar comment may be made as regards the stock usage on the metre gauge. The number of engines in use daily on different services increased by 3 per cent from 1,334 in 1947-8 to 1,401 in 1948-9 whereas the total engine miles increased only by 3 per cent from 51,178,000 to 52,800,000. This disparity was reflected in a decrease in the engine user which dropped from 108 to 105.

Stock Usage on Class I Railways  
*Etc. B, A, V, H, E, P and Assam*

Particulars	1947-8	1948-9	Inc. or d. % over 1947-8	1947-8	1948-9	Inc. or d. % over 1947-8
Average no. of engines available for use	3,674	3,852	4.84	1,608	1,661	3.23
Total engine miles (in thousands)	118,902	120,682	1.50	51,178	52,800	3.18
Engine miles per day per engine in use	105	103	-1.90	108	105	-2.78

**59. Engine usage.**—Measured in terms of engine miles per day per engine on line (i.e., inclusive of time occupied under repairs, etc.), the daily mileage on the broad gauge remained at the same level as in 1947-8 viz. 72 but on the metre gauge, it increased from 71 to 73. The percentage of engines under or awaiting repairs in Mechanical and Transportation Workshops advanced slightly from 20.2 per cent to 20.8 per cent on the broad gauge, but on the metre gauge it dropped from 10.9 per cent to 17.9 per cent. The downward trend of ton miles per locomotive day both for the locomotives on line and for the locomotives in effective use, noticeable in previous years, was checked during the year on both gauges, except for a further decrease in net ton miles per locomotive day in use on the metre gauge.

STATISTICS OF LOCOMOTIVE USAGE  
*Class I Railways, etc. B, A, V, H, E, P and Assam*

Year	Net ton miles			
	Broad		Metre	
	Per goods locomotive day on line	Per goods locomotive day in use	Per goods locomotive day on line	Per goods locomotive day in use
1947-8	11,787	27,011	6,702	10,810
1948-9	15,829	25,053	6,359	10,350

Details of engine usage are given in Statement No. 22 of Volume II of report





**64. Wagon position, Metre Gauge Wagon Pool.**—The number of public service wagons (in terms of 4-wheelers) in use on the metre gauge railways in the Northern Metre Gauge Wagon Pool, including Pakistan Railways, at the end of the year was 61,987, i.e., 117 less than that at the end of the previous year. The figure includes also the War Department stock. The total number of public traffic wagons owned by the Indian Dominion Railways in the Northern Metre Gauge Wagon Pool was approximately 36,126, excluding War Department stock, which has not been divided between India and Pakistan.

The total number of wagons loaded on the Indian Dominion Railways in the Northern Metre Gauge Wagon Pool during the year ending 31 March 1949, was 1,371,611. A proper comparison with the previous year is not possible owing to the partition of the Bengal Assam and Jodhpur Railways. There was an increase in the loadings as compared with the last year. The wagon position, however, continued to be difficult particularly because out of about 16,000 War Department wagons on hire a large percentage is unfit for service.

The number of wagons temporarily out of service on the Indian Dominion Railways in the Northern Metre Gauge Wagon Pool varied between 4,475 and 5,707. The marked increase in the number of wagons temporarily out of service has also contributed to the generally tight position of wagon availability.

**65. Neutral examination of interchange stock.**—The staff working under the Director of Wagon Interchange continued to examine wagons interchanged between Railways at the following junctions:

Broad gauge	Metre gauge (Northern Pool)
Ajmer (Nagpur)	Badarpur
Chhocki	Lalmanichat
Ghaziabad	
Khanalampura.	
New Delhi	
East Dock Junction.	
Wahair *	
Bongaon	
Lahore	
Macleodganj Road	
Ranaghat **	

\* Certain staff under the Director of Wagon Interchange were also posted at Moghalpura, Lillooah and Jhansi Workshops and they continued to examine wagons turned out of the workshops.

**66. Coal supply and coal stock position.**—At the beginning of 1948-9, the stocks of steam coal on Class I Railways were equivalent to 177 days' consumption. By 31 May 1948, stocks had increased so as to represent 99 days' average consumption, and thereafter declined until on 10 July 1948, stocks had been reduced to 186 days' requirements. The reason for the decline was chiefly due to operating difficulties on the East Indian Railway as a result of sickness amongst train crews. After 10 July, the position improved, stocks rising steadily until on 30 November 1948 they were at a level of 226 days' requirements—the highest level attained during the previous four years.

Neutral control reintroduced from 1 January 1949  
Neutral control transferred from Naihati to Ranaghat from 1 March 1949



Although it was not possible to draw firm conclusions from the statistics covering the relatively short period from 1 January 1940 to 31 March 1949, the preliminary reports from Administrations indicated in no uncertain manner that the changeover, apart from reducing railway earnings, had not been well received by the public.

During 1940-50, it has been decided to introduce on important trains, as an interim measure until the new designs of rolling stock are brought into service, a class of sleeping accommodation between Class II and Class I. This class which is designated "Class II Special" conforms very closely to the former Second class. The rate, however, is 11 pice per mile instead of 16 pice which was the basis of the former Second class fare.

## B. COMMERCIAL.

### 69. Alteration in rates and fares.

(A) Goods traffic. The revision of the rates structure having been finalized, the main changes were brought into effect from October 1948. The principal features of the changes are summarized below.

- (a) Replacement of the flat class rates 1, 2, 2A, 2B, 2C, 3 and Special Class C by telescopic rates.
- (b) Withdrawal of six standardized schedules, viz. C/A, C/O, C/M, C/L, C/H and C/N and the introduction of 13 Standard Telescopic Wagon Load Scales on continuous mileage.
- (c) Withdrawal of the exceptional class and schedule rates and indefinite station to station rates.
- (d) Standardization of short distance, terminal and transshipment charges.
- (e) Absorption of the 12½ per cent increase charge in the basic rates.
- (f) Renumbering of the classes.
- (g) Replacement of the schedule rates applicable to grain and pulses and oilseeds N, O, P in wagon loads by two telescopic scale of rates, applying on Railways grouped into two one on continuous mileage within each group of Railways and the other on discontinuous mileage for traffic exchanged between the two groups.
- (h) Withdrawal of the owner's risk classification for commodities for which the risk of carriage is negligible and bringing of the margin of difference between the O, R and R R rates within reasonable limits.
- (i) Enhancement of the station to station rates which were below the Railways' rate reducing powers with a view to bringing them within these limits.
- (j) Prescribing a minimum charge of Rs. 1.12.0 per ton or part of a ton on the carrying capacity of the wagon used.
- (k) Revision of the rates for live-stock.
- (l) Rationalization of the rates for coal, coke and patent fuel in full wagon loads at owner's risk, by the introduction with effect from 1 September 1948 of the following scale of rates in replacement of the Bengal Coal Scale, the C. P. Coal Scale, and the local scales applicable over the Madras and Southern Mahratta, Assam and South Indian Railways.

	Per maund per mile
1— 200 miles	0.25 pice
plus 201— 400 miles	0.07 pice
plus 401—1000 miles	0.06 pice
plus for distances beyond	0.05 pice

*plus* standard terminal charge of 2 annas per ton at each end and standard transhipment charge of 2 annas per ton at each break of gauge junction.

The above scale of rates is subject to a minimum charge of Rs. 4 12 0 per ton, inclusive of terminal and all other charges, and a maximum charge of Rs. 17 12 0 per ton, exclusive of terminal and all other charges.

- (m) Withdrawal of the increase in charges of 30 per cent for long freight rate for coal, coke and pig-iron.
- (n) Withdrawal of the blanket rate (equal rate for unequal distances) for coal.
- (o) Reintroduction of the rebate of 10 per cent for coal traffic loaded through the port of Calcutta to other coastal ports in the Indian Union, and to Marmagao Harbour, but limited to 45 per cent of the freight rates inclusive of terminal.

Some of the important changes due to the revised Indian Railway rates are summarized below.

- (a) With a view to making merchandise rates more attractive to farmers and traders, the rates for goods were introduced on a cost-plus basis. Indian Peninsula Railway reduced its freight.
- (b) Concessional rates for timber and for iron ore introduced from certain stations on the Great Indian Peninsula Railway to famine-stricken areas between 16 April 1940 and 31 March 1941. Ahmedabad, Bunch and Mohana trunks.
- (c) Rebate in freight charge for steel and iron ore, certain species of traffic loaded from and to Port of London and Russia was withdrawn.

(B) Passenger and coaching traffic.—Passenger traffic.—With this reclassification of passenger accommodation with effect from 1 January 1940 the basis of passenger fares were altered and referred to in paragraph 6.

Although it was not originally intended, in response to an imminent public demand, Class II sleeping accommodation was introduced on certain trains. For this a surcharge was levied.

With effect from 1 January 1940, Suburban Season Ticket fares for new Class I were standardized in Bombay, Calcutta and Madras.

Coaching traffic—(1) Luggage and Parcels.—With effect from 1 October 1948, the scale of charges for parcels and luggage other than small parcels not exceeding 1 cubic foot by measurement or 2½ seer in weight to which the former scales of charges continued to apply, were revised as follows.

(a) *Basis of full parcels and luggage rates.*

- 4 pies per maund per mile for the first 100 miles
- plus* 3 pies per maund per mile for the next 100 miles
- plus* 2 pies per maund per mile for the next 500 miles
- plus* 1½ pies per maund per mile for distances beyond.

NOTE.—The half and quarter parcels rates are respectively half and quarter the charge leviable under the above scale rounded off to the next higher anna.

(b) *Basis of rates for betel or pan leaves, butter, cream, etc.*

- 3 pies per maund per mile for the first 100 miles
- plus* 2 pies per maund per mile for the next 100 miles
- plus* 1½ pies per maund per mile for the next 600 miles
- plus* 1 pie per maund per mile for distances beyond.

(2) *Scales of charges for other descriptions of coaching traffic*—With effect from 1 October 1918, the scale of charges for other forms of coaching traffic, the principal items of which are shown below, were also enhanced

- (a) Tourist cars and saloons,
  - (b) Special trains for the public.
  - (c) Special trains for High Officials,
  - (d) Dogs, elephants, camels, ponies, calves, sheep and goats
  - (e) Palanquins,
  - (f) Motor cars, motor boats and aeroplanes
- (3) *Other important modifications made from 1 October 1918*
- (a) "Increased charge" on luggage and parcels and "Increased charge" and "Surcharge" on passenger traffic were withdrawn.
  - (b) Standard terminal charge was levied on luggage and parcels traffic and also on traffic in motor cars, carriages, etc., and live-stock.
  - (c) Supplementary charge leviable for travelling in air-conditioned coaches was enhanced.

## 70. Effect of the changes in rates and fares introduced at the beginning of 1918 and 1919.

**Goods traffic.**—Three important factors affecting goods traffic contributed to the increase in freight earnings during the year. The first was the partial revision of the rates structure on 1 January 1918, and the second the introduction of a rationalized coal scale with effect from 1 September 1918. The last was the practically complete revision of the goods rates incorporated in the rates structure brought into effect on 1 October 1918.

On the Bengal Nagpur Railway, substantial increases occurred in earnings from coal, manganese ore, iron ore, limestone and general merchandise, the drop in the volume of traffic being due not to the effects of the rate changes but mainly to shortage of wagons.

On the East Indian Railway, during the period from April to August 1918, there was a drop of 16.95 per cent in the net ton miles of coal but here again this was not the outcome of the new rates for coal but of other factors. Earnings from coal recorded a slight increase of 0.81 per cent. That the new scale has not retarded coal movements is clear from the fact that during the period September 1918 to March 1919, the tonnage carried and ton mileage of coal were substantially higher than the figures of the corresponding period of the previous year. Earnings on this traffic increased by Rs. 318.42 lakhs or 50.47 per cent. The details may be seen from the following table.

COAL TRAFFIC AND EARNINGS ON THE E. I. RAILWAY DURING 1917-8 AND 1918-9

PARTICULARS	1948	1947	Difference over 1917	
			Increase (+) Decrease (—)	Per cent Increase (+) Decrease (—)
			April to August 1948	
Earnings (in thousands)	Rs. 2,86,18	Rs. 2,63,89	Rs. + 2,29	+ 0.81
Tons carried (in thousands)	4,717	5,812	—1,125	—19.26
Net ton miles (in thousands)	1,608,816	1,938,343	—329,527	—16.95
September 1948 to March 1949				
Earnings (in thousands)	Rs. 6,74,32	Rs. 3,55,80	Rs. + 3,18,42	+ 89.47
Tons carried (in thousands)	10,203	7,100	+ 3,103	+ 43.70
Net ton miles (in thousands)	3,104,542	2,076,008	+ 1,027,934	+ 49.50



Statistics of the number of passengers carried and the earnings therefrom on certain Indian Government and State Railways during 1948-9 are compared with those for 1947-8 in the statement below.

NUMBER OF PASSENGERS AND EARNINGS ON SELECT RAILWAYS

	Passengers	1947-8	1948-9	Increase or decrease over 1947-8
<b>North-eastern</b>				
No. of passengers		4,18,000	8,49,000	6,31,000
Earnings	Rs. 42,00,000	Rs. 5,07,00,000	Rs. 1,67,00,000	
<b>North Indian</b>				
No. of passengers		7,80,000	7,291,000	1,913,000
Earnings	Rs. 70,20,000	Rs. 61,65,000	Rs. 18,10,000	
<b>North-western</b>				
No. of passengers		17,40,000	18,282,000	9,82,000
Earnings	Rs. 1,57,00,000	Rs. 19,37,16,000	Rs. 4,50,00,000	
<b>North-east Indian</b>				
No. of passengers		10,04,000	10,905,000	20,50,000
Earnings	Rs. 1,70,00,000	Rs. 10,12,22,000	Rs. 1,80,00,000	
<b>North-eastern (Assam)</b>				
No. of passengers		6,27,000	6,27,000	0
Earnings	Rs. 1,70,00,000	Rs. 62,70,000	Rs. 1,52,00,000	
<b>North-eastern (Bengal)</b>				
No. of passengers		1,00,000	10,01,000	0
Earnings	Rs. 1,20,00,000	Rs. 1,10,00,000	Rs. 1,00,00,000	
<b>North-eastern (Tamil Nadu)</b>				
No. of passengers		8,00,000	87,10,000	1,70,000
Earnings	Rs. 1,00,00,000	Rs. 2,02,00,000	Rs. 1,00,00,000	
<b>North-eastern (Madras)</b>				
No. of passengers		1,00,000	10,10,000	0
Earnings	Rs. 1,00,00,000	Rs. 2,00,00,000	Rs. 1,00,00,000	

# 71. Efforts to secure better wagon usage and wagon loads.—The

measures adopted by Railways during previous years in order to secure better usage of wagons and improved wagon loads were continued. With effect from 1 October 1948, standard minimum weight conditions were prescribed for several commodities carried in wagon loads. Nominated loading was introduced for special commodities in full train loads between important centres. Reference to certain other steps taken during the year are summarized in the following paragraphs.

On the Bengal Nagpur and Great Indian Peninsula Railways the minimum load for the *Through Route Van* was raised to 250 maunds.

In order to avoid weightment of wagons and to eliminate the demand for larger types of wagons, lump sum rates on the floor area basis were introduced for bamboos, splints and chips for paper making when booked from Bengal Nagpur Railway stations to Titaghur, Nabhati and Kankinara Paper Mills. Similar rates for charcoal and firewood were introduced in local booking over the Great Indian Peninsula Railway. Fixed weights for charge according to the floor area of the wagons used were introduced over the Bengal Nagpur Railway for bamboos for paper mills, charcoal and firewood, in order to avoid weightments with a view to securing better turn-round of wagons.

The free time for loading and unloading of wagons at certain sidings over the East Indian Railway was reduced to six hours. The free time for the removal of consignments from the goods sheds at certain stations was reduced and enhanced wharfage rates on sliding scales introduced at Howrah Ranki-topore, Salka, Monghyr, Bhagalpur, Sakrigali Ghat, Serampore Shoraphuli and Bally.



In order to discourage bogus registration of wagons, instructions were issued to Railways to levy a wagon registration fee of Rs. 50 per broad gauge wagon, Rs. 25 per metre gauge wagon and Rs. 10 per narrow gauge wagon, at the time of registration of goods. This wagon fee is deducted in the freight charges when the consignment is loaded, but is liable to forfeiture if the goods are not ready for despatch, or if the shipment is otherwise reported. The fee is refunded if the registration is cancelled before it comes to the notice of railway officials that goods are not ready for dispatch before shipment of wagons, whichever is earlier.

The following categories of traffic are exempted from the scope of the levy of the wagon registration fee:

- (a) military traffic;
- (b) indent by railways and in their own interests; and
- (c) traffic brought on to railway premises and has either been loaded and registered or de-loaded to particular traffic.

There is evidence that the introduction of this wagon fee has been beneficial in preventing bogus registration and bogus shipments.

**72. Coordination of rail, road and water transport.** During the year the Railways served the Bombay Presidency invested a sum of Rs. 66.7 lakhs, representing 25 per cent of the total capital, in the Bombay Government's nationalisation scheme. In the Central Provinces and Berar, consequent on the withdrawal of the Managing Agents of the Central Provinces Transport Service Limited, a new State-owned company, the Railways purchased 50 per cent of the capital, leaving the total investment being Rs. 3.92 lakh. Other Provinces have no bearing on transport.

As regards coordination with inland water transport during the year there was no important development to be reported.

**73. Closer contacts with business interests.**—Railways continued to maintain close contacts with business interests through informal meetings with Chambers of Commerce, trade associations and merchants at important centres. The subjects discussed at these meetings related to such matters of current interest to the business community as wagon supply, booking restrictions, delays to goods in transit, better transport facilities, the settlement of claims, freight charges, etc. Railway representatives in their capacity as members thereof maintained close liaison with Chambers of Commerce and participated in the deliberations of Transport Sub-Committees of these bodies. Such contacts proved of value in fostering good relations and understanding between the railways and commercial interests.

**74. Claims for compensation and refunds.**—Despite various measures adopted by the Railways to expedite the disposal of claims, the number of claims remaining unsettled at the end of the year was higher than that of the previous year. The main reasons for this were

- (a) the unprecedented increase in the number of claims received during the year;
- (b) the change in the procedure under which enquiries regarding non-receipt of packages or consignments which were previously treated as 'No claims' cases, are now treated as 'Claims' cases immediately on receipt of intimation from the public;
- (c) difficulty experienced in obtaining the necessary information or files from the Pakistan Railways in connection with pre-partition claims, which are required to be settled by the Indian Railways.

The following statements for Class I Railways show for 1918-9:—

- (A) the number of claims received in respect of goods or parcels damaged or lost, and of goods and parcels overcharged, and the average time taken in their settlement,
- (B) the number and value of claims in respect of goods or parcels lost or damaged under main causes;
- (C) the number of court cases in respect of goods or parcels lost, damaged or delayed and their disposal.

STATEMENT A

(Claims received for Goods or Parcels damaged, lost or overcharged, and the average time for settlement)

Item No.	Particulars	A. & M.	D. N.	Phosphate	P. & A. L.	E. I.	E. F.	G. I. F.	Jointly	M. & S. M.	Myersdale	N. S.	O. T.	S. L.
1	Number of claims involving compensation for goods or parcels lost, damaged, or delayed carried over as reported at the close of the preceding year	1,019	10,030	7,704	21,123	22,303	21,900	40,963	8,043	7,721	2,717	8,924	29,529	2,529
2	Number of claims received (and reported) for compensation on account of goods or parcels lost, damaged, or delayed during the current year	12,770	20,010	8,908	21,543	22,133	21,104	64,941	8,443	26,041	4,214	6,722	43,812	9,441
3	Number of claims referred to arbitrators 1 and 2 received during the year	11,073	21,507	4,223	20,948	21,550	21,111	64,777	8,932	26,372	2,107	4,637	41,245	10,426
4	Balance outstanding as reported at the close of the year	1,045	20,170	7,500	21,770	20,000	6,022	2,012	4,000	4,412	2,020	4,019	15,201	1,382
5	Net amount paid in compensation	11,000	20,000	10,113	20,902	20,202	6,910	1,000	21,235	4,100	1,000	1,000	70,511	1,000
6	Percentage of sum paid in compensation (item 5) to gross earnings	1.0	1.20	0.70	0.72	0.60	0.65	0.41	0.23	0.40	0.10	0.20	0.10	0.10
7	Average time taken in settlement of claims shown against item 1 & 2 (days)	60	15	05	31	04	20	132	00	117	104	277	70	27
8	Number of applications received for redress on goods and parcels overcharged	7,661	4,315	3,717	11,740	20,923	1,103	10,154	2,750	20,000	2,500	2,500	4,800	27,732
9	Average time taken in settlement of claims shown against item 8 (days)	72	300	00	07	07	20	64	117	46	84	233	00	22

STATEMENT B

Number and value of claims paid

Item No.	Particulars	A. & M.	D. N.	Phosphate	P. & A. L.	E. I.	E. F.	G. I. F.	Jointly	M. & S. M.	Myersdale	N. S.	O. T.	S. L.
1	Claims paid on account of value of goods lost	712	12,521	2,000	2,000	21,000	-	22,000	212	2,000	2,000	1,000	5,076	1,515
2	Claims paid on account of value of goods damaged	2,000	3,723	3	20	3,072	-	1	134	22	20	20	8,542	87
3	Claims paid on account of value of goods damaged by fire	1,000	7,010	60	11,722	3,000	-	1	0.0.0	33,621	20	11,570	11,70,112	0,001
4	Claims paid on account of value of goods damaged by fire	10	20	1,000	20	00	-	070	00,017	2	11,300	2,000	18,716	4,702
5	Claims paid on account of value of goods damaged by fire	10	20	1,000	20	00	-	070	00,017	2	11,300	2,000	18,716	4,702
6	Claims paid on account of value of parcels lost and parcels damaged and stolen	71,534	9,90,000	12,000	2,000,000	10,77,000	-	1,10,000	23,123	4,30,000	2,000	1,50,000	3,00,000	63,000
7	Claims paid on account of value of parcels lost and parcels damaged and stolen	1,335	220	00	0,000	1,000	-	0,070	23	0,000	1,000	715	1,040	1,007

\* Provisional.

† Included under item 1.

‡ Localization of losses was not possible during the year and hence claims paid have not been completely allocated to the various causes.



**76. Prevention of ticketless travel.**—The measures for the prevention of ticketless travel outlined in the Report for 1947-8 were continued during the year. Reference was made last year to the arrangement by which the Government of the United Provinces provided special police and magistrates, the railways defraying the cost. Arrangements were concluded with the Government of Bombay during 1948-9, for the provision of additional police in furtherance of the special measures adopted by the Great Indian Peninsula Railway for prevention of ticketless travel in the Bombay Province. The railway undertook to defray the cost of the additional police but the cost of additional magistrates were borne by the Government of Bombay.

**77. *Mela* traffic.**—As the movement of pilgrims to various centres where *melas* and fairs were held was no longer restricted, traffic demands on these occasions were met by the adoption of such operational arrangements as were practicable within the limits of the rolling-stock available.

**78. Measures to ensure civility and assistance on the part of railway staff in their dealings with the public.**—Strenuous efforts continued to be made to promote a spirit of courtesy and helpfulness on the part of the staff towards passengers and other members of the public. Serious and prompt notice was taken of all complaints received from the travelling public in this connection, and instances of exceptional services or assistance were rewarded.

**79. *Peak* hours.** . . . . . of tickets.—With the increased difficulty at booking windows, little difficulty was experienced in obtaining tickets at stations.

# CHAPTER V

## RAILWAY COLLIERIES

**80. Output from principal railway collieries.**—The total output from the principal railway collieries during the year 1948-9 as compared with that during the previous year is shown in the accompanying table. There has been a decrease of 386,521 tons or 11.52 per cent as compared with the previous year.

OUTPUT OF COAL FROM RAILWAY COLLIERIES DURING 1948-9

		1948-9					
Colliery	Railway	1947-8	1948	1949		1950	
				A	B	C	D
1. Bhursandya	B. I.	15,147	115,141			115,141	
2. Kargali	G. I. P.	6,321	6,351			6,351	
3. Kurharbaree and Serampore	B. I.	10,000	10,000	55,426	84,914	7,633	23
4. Joint Bokaro	B. I. and B. N.	1,221,210	1,670,217			1,670,217	
5. Joint Sawang	B. I. and B. N.	45,000	45,899			45,899	
6. Jarangdih	B. I., B. C. I. and M. S. M.	20,575	21,315				21,315
7. Talefer	M. S. M.	120,570	120,570				120,570
8. Kuraray	B. I., B. C. I.	20,000	20,000			20,000	
9. Argada	B. N.	12,047	12,047			12,047	
10. Dantora	B. N.	6,776	6,776				6,776
Total		1,467,868	2,479,426	55,426	1,014,791	2,27,634	

The total quantity of coal despatched by railway collieries during 1948-9 amounted to 2,688,576 tons, of which 2,659,100 tons, or 98.9 per cent, were despatched to railways. This represents 26.8 per cent of the total coal consumption of railways during the year.

**81. Coking coal.**—The particulars of the coking coal produced by railway collieries during the year are summarized in the following statement.

Colliery	Grade and quantity in tons of coal produced	Quality of coal and where used
1. Kargali	Grade I— 606,495 Grade II— 23	Inferior coal of high ash content and poor coking properties, used entirely for goods services. Very inferior coal unsuitable for metallurgical purposes owing to high ash content. Used for slow goods and shunting services.
2. Giridih (Kurharbaree and Serampore.)	Sol. A— 378,436 Sol. B— 84,914 Grade I— 2,633	Best high grade coal, the dust of which is manufactured into hard metallurgical coke for use in Railway Foundries and Workshops. Used for mail and express goods services. Inferior grade coal which cannot be used for production of metallurgical coke unless blended with other high grade coals or specially treated by washing. Used mainly for goods services.
3. Joint Bokaro	Grade I— 1,090,217	Inferior grade coal, the dust of which is suitable for metallurgical purposes. The seam worked as a whole cannot, owing to high ash content, be used even for blending with high grade coals, unless intensive cleaning and washing is resorted to. Used entirely for goods services.
4. Joint Sawang	Grade I— 45,899	Ditto.
5. Jarangdih	Grade II— 21,315	Very inferior coal, unsuitable for metallurgical purposes. Used for slow goods and passenger services.
6. Argada	Grade I— 128,047	Inferior grade coal unsuitable for metallurgical purposes owing to its high ash content. Used for goods and shunting services.

**82. Total coal consumed by railways.**—The total amount of coal consumed on Class I, Class II and Class III Railways during the year is shown below, along with figures for the previous year

	Tons	
Class I Railways—	1917-8	1918-9
Indian Government Railways	8,292,567	9,193,853
Other Class I Railways	292,691	376,644
Class II Railways	220,261	235,453
Class III Railways	79,157	81,795
<b>TOTAL</b>	<b>8,990,672</b>	<b>9,895,747</b>

The distribution by grade of the total quantity of coal consumed by railways is as follows:—

Grade	Tons	
	1917-8	1918-9
Selected A	859,368	1,182,832
Selected B	1,629,277	2,184,491
Grade I	1,291,662	1,833,986
Grade II	1,428,115	1,457,662
Grade III A and B	497,627	205,457
Small coals	314,451	385,319
<b>TOTAL</b>	<b>8,990,672</b>	<b>9,895,747</b>

**83. Coal mined in India.**—In 1918-9, the coal mined in the various provinces of India amounted to 27,438,502 tons as against 26,892,893 tons in 1917, an increase of 545,609 tons.

**84. Coal despatched by rail.**—The quantity of coal carried by the East Indian and Bengal Nagpur Railways during 1918-9 was 21.45 million tons, or 2.09 million tons more than that carried during the previous year. The comparative figures for the two railways are as follows:—

	Tons	
	1917-8	1918-9
East Indian Railway	12,912,245	14,919,713
Bengal Nagpur Railway	9,415,855	9,526,943
<b>TOTAL</b>	<b>22,328,100</b>	<b>24,446,656</b>

\* Revised figures

## CHAPTER VI

### ROLLING-STOCK AND MATERIALS

**85. Additions to equipment.**—During the year, orders were placed for the following locomotive and rolling stock for broad-gauge and metre-gauge Indian Government Railways. The figures include the stock built in railway workshops.

	Broad-gauge	Metre-gauge
Locomotives	94	174
Coolies' carts	—	—
Trucks	1,146	—

New locomotives and rolling stock actually purchased during the year are as stated below:

	Broad-gauge	Metre-gauge
Locomotives	71	13
Coolies' carts	2	—
Trucks	1,044	—

The cost of the above rolling stock is Rs. 1,00,00,000.

**86. Locomotives.**—The average tractive effort at piston pin expressed in lbs. on Great Indian Railway during 1947-48 was 10,412, as against 10,375 in 1946-47, showing a slight increase for the year. The average tractive effort for the electric locomotives of both gauges and the Electric locomotives of metre-gauge remained the same as in the previous year. The details are given in the following table:

AVERAGE TRACTIVE EFFORT PER ENGINE IN LBS.

Locomotives	Broad-gauge		Metre-gauge	
	1946-47	1947-48	1946-47	1947-48
Steam including special and cycle types	11,757	11,439	10,375	10,375
Diesel Electric	11,412	11,412	—	—
Electric	11,412	11,412	10,375	10,375

**87. Scrapping of overage and uneconomical locomotives.**—During the year railways were advised of the importance of eliminating locomotives which were uneconomical in service, and getting such engines off the line on receipt of new engines allotted to them by the Board. This would not only help to lighten the load on workshops and release capacity for repair of the new engines, but also to enable railways to reclaim spares from the scrapped engines, thus reducing the requirement of such spares for the maintenance of similar engines left on line. Steps in this direction are being taken by the railways concerned, and it is expected that a number of uneconomical and condemned engines will be broken up during 1949-50.

**88. Manufacture of boilers and locomotives in India.**—The Locomotive Building Works under construction at Mihijam have now been renamed as Locomotive Manufacturing Works, Chittaranjan. A more detailed reference to this project is made in para. 42 of Chapter III.

Messrs. Tata Locomotive and Engineering Company Limited completed 50 boilers during the year.



W. P. TYPE BALDWIN LOCOMOTIVE, G 1 P. RAILWAY BEING UNLOADED (COURTESY 'TIMES OF INDIA', BOMBAY)





**89. Repairs to locomotives in Railway Workshops and Running Sheds.**—Although the average number of engines under, or awaiting, repairs in running sheds increased on some railways, the overall position of engines out of service improved as compared with 1947-8, on both broad and metre gauges.

There was an appreciable increase in the number of locomotives repaired in railway workshops and a decrease in the number overdue periodical overhaul.

Difficulties were experienced by workshops as a result of shortages in particular classes and sizes of steel. There were also shortages of certain spare parts for which the Railways have been dependent upon outside supply. In order to expedite the supply of essential spare parts, it was decided to send a Purchase Mission to visit different countries in Europe with a view to obtaining locomotive spare parts on a rate contract basis.

**90. Rationalization of manufacturing capacity in Railway Workshops.**—The Rationalization Committees were regrouped on the basis of the types of locomotives common to each of the railways in the group. A few items have been selected for manufacture by one railway on mass production lines in order to meet all the requirements of the Government Railways.

A special allotment of steel is being made in each quota period for fittings to be made by Ordnance Factories under the Rationalization Scheme.

Good progress has been made with the preparation of part drawings of American type locomotives.

**91. Supply of rails and fishplates from indigenous sources.**—Reference was made in the last report to the restricted supplies of steel during 1947-8. The position with regard to supplies of steel has been no better during the current year. The indigenous production of rails and fishplates during 1948-9 was placed at about 72,000 tons, out of which 52,600 tons were to be supplied against unexecuted outstanding orders from previous years with the indigenous firms, viz., Messrs. Tata Iron and Steel Company Limited and the Steel Corporation of Bengal Limited. The balance was allocated against 1948-9 requirements. The actual out turn by the two firms during 1948-9, however, amounted to only 58,557 tons of rails and 3,827 tons of fishplates, or 62,384 tons in all, instead of 72,000 tons, as expected.

**92. Wooden Sleeper Purchase Organization.**—The total value of timber and sleepers purchased by Class I Railways (excluding the Jodhpur, Mysore, and Nizam's State Railways) during 1948-9 was as follows

	(in thousands of rupees)
Timber	1,71.70
Sleepers	1,05.71

The relative position of various kinds of sleepers may be seen from the following percentages based on the total number of sleepers in the tracks of Class I Railways, excluding the Mysore Railway

	(Figures are in percentages)			
	Wood	Cast iron	Steel	Others
Broad Gauge	27.00	50.74	22.23	0.34
Metre Gauge	60.02	4.66	25.52	

The Wooden sleeper track mileage, including sidings, of the broad, metre and narrow gauges on Class I Railways, excluding the Mysore Railway, as on 31 March 1949 was as follows :

	Miles
Broad Gauge . . . . .	7,965.41
Metre Gauge . . . . .	10,517.41
Narrow Gauge . . . . .	1,291.95
Total . . . . .	19,774.77

out of a grand total mileage, excluding sidings, of :

	Miles
Broad Gauge . . . . .	15,050
Metre Gauge . . . . .	12,622
Narrow Gauge . . . . .	1,894

No wooden sleepers were imported for use by Indian Railways.

The average price of 1st Class Sal sleeper in the Eastern Group was :

Broad Gauge . . . . .	Rs. 19.90 per sleeper
Metre Gauge . . . . .	Rs. 19.01 .. ..

At the Dhilwan creosoting plant on the Eastern Punjab Railway, 235,945 Broad Gauge sleepers of coniferous species were treated with a mixture of 40 per cent creosote and 60 per cent of fuel oil during 1947-48. The details are given below :

	Sal	Chir	Fir
No. of sleepers treated . . . . .	15,411	15,297	1,967
Average absorption of mixture per sleeper . . . . . lbs.	14.8	14.52	14.89
Cost of treating per sleeper . . . . . Rs.	1-11-6	2-7-7*	1-12-11

\* Higher cost of treating *chir* sleepers is on account of higher transport charges to Dhilwan namely Rs. 0-10-8 as compared to Rs. 0-2-9 for fir per sleeper.

Besides these, a number of sleepers for Bhakra Dam, Sleeper ends, Poles and Metre Gauge sleepers, etc., equivalent to 49,263 Broad Gauge sleepers, were also treated during the same period.

At Naharkatiya Treating Plant in Assam 7,055 Broad Gauge and 154,170 Metre Gauge sleepers of various species like *Hollong*, *Hollock*, *Jutli*, *Sam* and *Makai* were treated during the year. The cost of treatment per sleeper was Rs. 4-6-5 per Broad Gauge and Rs. 2-3-2 per Metre Gauge sleeper.

**93. Value of railway materials purchased.**—The total value of stores purchased by the Indian Government Railways during the year, including the Eastern Punjab and Assam Railways amounted to Rs. 100.44 crores.

The value of stores purchased by Indian Government Railways, excluding the Eastern Punjab and Assam Railways which came into existence on 15 August 1917, increased from Rs. 78.29 crores in 1917-8 to Rs. 91.91 crores in 1918-9. The value of indigenous materials purchased increased by Rs. 7.20 lakhs and that of imported materials by Rs. 6.42 lakhs. There was a general increase under all the heads of purchases, except under miscellaneous stores, which recorded a small decrease of Rs. 29 lakhs. This item is shown in the statement below as "All other stores". The main items of increase were under 'stores hardware', copper, tin, etc., by Rs. 6.05 lakhs, permanent way materials and track tools by Rs. 3.17 lakhs, and rolling-stock by Rs. 2.45 lakhs. Electric and train and locomotive lighting plants, etc., advanced by Rs. 90 lakhs, workshop machinery, etc., by Rs. 52 lakhs and building materials, water mains, etc., by Rs. 56 lakhs.

The following statement presents a summary of the stores purchased during 1918-9 and the corresponding figures for 1917-8. The detailed figures are given in Appendix A of Volume II of this Report.

### VALUE OF RAILWAY MATERIALS PURCHASED DURING 1918-9

(Figures in lakhs)

Particulars	Including Eastern Punjab and Assam					Total purchases excluding Eastern Punjab and Assam	
	Imported materials		Total imported materials	Indigenous materials	Total	1918-9	1917-8
	Purchased direct	Purchased through agents in India					
	Rs.	P.	Rs.	Rs.	Rs.	Rs.	P.
(A) Engines and locomotives, fittings and special equipment	..	..	..	3	3	8	2
(B) Fitting up plant and components (including oil band and power machinery)	13	11	24	12	36	23	15
(C) Workshop machinery, tools and equipment (including power water machinery and tools)	20	67	106	16	122	120	65
(D) Permanent way material and track tools	174	92	266	6.03	272	267	370
(E) Rolling-stock	76	176	252	3.27	255	241	297
(F) Building materials, water mains, sewage system or track and yard, including materials and fuel and miscellaneous materials, etc.	3	23	26	1.23	27	142	86
(G) Stores, hardware, copper, tin and zinc ware, oil bottles, canvas and India rubber in bulk, materials, painters' stores, timber and fuel oil, etc.	7	146	153	22.94	244	22.23	16.18
(H) Electrical and train and locomotive lighting plants and materials, etc., and telegraph and telephone equipment	29	120	149	1.11	150	2.20	1.27
All other stores	8	1.27	1.29	50.79	52.08	48.27	43.56
Total	274	11.19	14.15	88.01	1,00.44	91.91	78.29

**94. Intake of indigenous goods.** Of the total value of purchases of railway stores and materials made during 1947-8 by the Indian Government Railways, the value of stores imported direct amounted to Rs. 2,73.97 lakhs. Imported stores purchased in India amounted for Rs. 11,69.33 lakhs. Stores of Indian manufacture or indigenous origin have naturally accounted for the bulk of the expenditure, the amount during the year being Rs. 86,00.88 lakhs or 85.63 per cent of the total.

The comparative figures of total purchases for 1947-8 and 1948-9 in respect of the Indian Government Railways (including the Eastern Punjab and Assam Railways) are given below. These include purchases made through the Ministry of Industry and Supply and other Government agencies, and purchases of foodgrains for Railway grain bags.

#### TOTAL VALUE OF PURCHASES OF STORES

(In lakhs of rupees)

Year	Total value of purchases	Value of stores purchased through the Ministry of Industry and Supply		Percentage of total value of purchases	
		Rs.	Paise	Rs.	Paise
1	2	3	4	5	6
		Rs.	Paise	Rs.	Paise
1947-8 . . . . .	49,124	49,124	00	81,794	00
1948-9 . . . . .	2,73.97	11,69.33	86,00.88	1,00,44.18	85.63

**95. Value of stores purchased through the Ministry of Industry and Supply.**—The comparative figures of the value of stores purchased through the Ministry of Industry and Supply for 1947-8 and 1948-9 are given below:

#### STORES PURCHASED THROUGH THE MINISTRY OF INDUSTRY AND SUPPLY

(In lakhs of rupees)

Year	Total value of stores purchased	Value of stores purchased through the Ministry of Industry and Supply	
		Amount	Percentage of total value of stores purchased
1	2	3	4
	Rs.	Rs.	Rs.
1947-8 . . . . .	81,39.40	12,19.29	14.83
1948-9 . . . . .	1,00,44.18	55,01.20	54.77

NOTE.—(i) The figures for 1947-8 exclude purchases made for the Railway Board and the Chief Mining Engineer, as also the value of purchases made by the Textile Commissioner, Bombay, Director-General, India Store Department, London, India Supply Mission, Washington and Coal Commissioner, on behalf of the Indian Government Railways.

(ii) The figures for 1948-9 exclude purchases made for the Railway Board and the Chief Mining Engineer, but include those made by the Director-General, India Store Department, London, India Supply Mission, Washington, Textile Commissioner, Bombay and Government Railways, as also the value of coal supplied by the Government of India to the Indian Government Railways.

**96. Value of stores purchases controlled by the Railway Board.**—As in previous years, the Railway Board continued to purchase wagons for the Indian Government Railways. The value of the stores thus purchased during 1917-8 and 1918-9 by the Railway Board is given below:—

**STORES PURCHASED BY THE RAILWAY BOARD**

(In lakhs of rupees)

Year	Total value of stores purchased	Value of stores purchases made by the Railway Board	
		Amount	Percentage of the total value of stores purchased
1917-8	81.79 10	4.15 32	5.1
1918-9	1,00,46 12	3.04 77	3.0

The Board also exercised a great deal of control in the case of purchases of locomotives, boilers, rails and sleepers for Railways during the year under review; but the actual orders for these items are placed either by the Railways direct (as in the case of wooden and cast iron sleepers) or through the Ministry of Industry and Supply. The value of these items amounted to Rs. 11,86.63 lakhs during 1918-9 as compared with 5,11.31 lakhs during 1917-8. The wagons referred to above were manufactured in India.

**97. Value of cash purchases in North America, controlled by the Railway Board.**—The total debits raised by the Deputy Accountant General, Industries and Supplies, New Delhi, against various Railways during the year 1918-9 on account of Cash Purchases in North America, controlled by the Railway Board amounted to Rs. 11,52,53.079. These debits represent the cost of all purchases made in the U. S. A. for Railways including the cost of rolling stock, spares, rails, etc.

**98. Direct purchases by Railways.**—The value of direct purchases by Railways during 1918-9 amounted to Rs. 42,38 lakhs as compared with Rs. 65,31 lakhs during 1917-8.

**99. Stores balances.**—The statement below compares the total stores balances at the end of 1918-9 with those at the end of 1917-8. The figures are provisional as the accounts for the period ending 14 August 1917 have not so far been closed:

**VALUE OF TOTAL STORES BALANCES ON RAILWAYS DURING 1917-8 AND 1918-9**

(In lakhs of rupees)

Railways	1917-8	1918-9
Assam	20	1.05
Bengal Nagpur	1.23	4.97
Bombay, Baroda and Central India	3.06	3.08
Eastern Punjab	3	1.33
East Indian	8.65	11.43
Great Indian Peninsula	6.16	7.31
Madras and Southern Mahratta	1.95	2.47
South Indian	1.51	2.02
Oudh Tirhut	1.51	1.21
Other Indian Railways	91	1.59
<b>TOTAL</b>	<b>29.40</b>	<b>36.44</b>

**100. Timber supply situation.**—On account of the general shortage of timber, the railways were unable to obtain supplies to their full requirements. The table below shows the quantities demanded and the quantity passed by the Railways during 1948-9.

SUPPLY OF TIMBER (TONS) IN INDIAN RAILWAYS, 1948-9

Year	Quantity of timber supplied to the Railways	
	Quantity demanded	Quantity passed
II Quarter of 1948	1,22,271	20,145*
III " " 1948	1,22,271	5,970
IV " " 1948	1,22,271	15,197*
I " " 1949	1,22,271	5,120
<b>Total</b>	<b>4,89,104</b>	<b>46,432</b>

\* In transit.

At the end of the year, the working stock of timber in the Railways (except Mysore State Railway) totalled 27,893 tons.

**101. Steel supply situation.** During the year 1948-9, the demands of railways for steel (excluding rails and fishplates) for essential mechanical and civil engineering requirements amounted to approximately 250,000 tons. On account of the decline in indigenous production, the supply of steel to railways during the year was restricted to 181,000 tons, or 72 per cent of the minimum requirements. The essential supplies were met primarily for essential repairs to permanent way, coaching stock, rolling stock and rolling stock.

In view of the extensive stock of coaches and rolling stock during the period of inflation, and the considerable delays in obtaining and repairs that had accumulated thereby, the reduced supplies of steel proved insufficient to meet the full quantity required to maintain essential repair schedules. The out-turn from railways steel works was also adversely affected.

The unfavourable steel situation also resulted in order for replacement of coaching vehicles and General Service Wagons being severely restricted and during the year under review, it was not possible to place an order for more than 3,300 General Service Wagons, the number representing 40 per cent of the capacity available in the country with the steel-making firms.

As regards rails and fishplates, supplies to Railways from indigenous sources during the year 1948-9 were restricted to the extent of 71,000 tons. This tonnage was quite insufficient to meet Railway minimum demands for efficient maintenance of the permanent way and to provide for the essential requirements for projects of national importance. Orders to the extent of 100,000 tons of rails and fishplates were therefore placed on Canadian firms for import during the year.

## **102. Supply position of vital stores or components of first importance.**

**Indigenous stores.**—The position with regard to the supply of indigenous stores for items necessitating the use of steel was unsatisfactory throughout the year under review on account of acute shortage. Shortage of indigenous capacity in respect of certain other items also affected the delivery position.

The vital items concerned were permanent way, fittings, axles, steel castings (mainly on account of lack of machining capacity), and fabricated steel work for bridge and similar allied permanent way structures. Other items of importance where delays in supplies occurred were cast iron pipes, on account of shortage of indigenous capacity and fire-bricks. Difficulties in movement and transport of raw materials were stated to be the cause of the delayed supply of these items of stores.

Towards the end of the year, there were encouraging signs of accelerated supplies in the future on account of improvement in the general transport position and better prospects of availability of steel.

**Imported Stores.**—Delivery of railway stores and equipment from the United Kingdom during the year was affected by the acute shortage of steel in that country, where, in spite of the expanding output, the demand far exceeded the supply. This was especially the case in regard to the supply of laminated bearing springs as well as helical and volute springs, delivery dates quoted by manufacturers being postponed to 18 to 24 months from the date of the contract. The supply of locomotive boilers to the Indian Government Railways provided another instance of the unsatisfactory situation, deliveries in this case being quoted as far off as three years. Supplies of other vital items, such as, vacuum brake equipment, injectors and buffer, and buffer components for metre gauge stock, remained unsatisfactory throughout the year.

Supplies of boiler tubes, boiler plate, steel castings, crank axles and tyres, were, however, maintained at a fair level during the year.

The position was most disappointing in regard to supplies of coloured signal glass, and chains of all descriptions, such as lashing chains, binding chains, and sling chains. Orders placed as far back as five years ago remained uncompleted.

The year, however, ended more hopefully with encouraging signs of improvement in supplies for a number of commodities.

The following were the main items of stores which were outstanding at the close of 1948-9 against orders placed in previous years.

Serial No.	1944 in tons	1945 in tons	1946 in tons	1947 in tons	1948 in tons
1	Chains	Chains	Chains	Chains	Spring
2	Boilers	Boilers	Boilers	Boilers	Boiler tubes
3	"	"	Lenses	Lenses	Glass sheets
4	"	"	Motor coaches and trailers	Motor coaches and trailers	Steel castings
5	"	"	Loco spares	Loco spares	Loco spares
6	"	"	Pumps		

The main items of importance on order from the United States of America were spare parts for the locomotives manufactured in North America now in service on the Indian Government Railways. There was no dearth of capacity for manufacturing these spare parts in the United States of America, but, at intervals, the scarcity of certain raw materials hampered manufacturers and affected the period of delivery quoted, which was normally from three to five months. During the year, shipment of spare parts against 1947 and 1948 demands by Railways were maintained at a steadily increasing level.

The supply position of stores *ex* Australia has been satisfactory and orders for only 42 items, mainly consisting of boiler gauge glasses, remain to be completed by that country.

**103. Situation regarding theft of railway property.**—No cases of thefts of stores and valuable materials from Stores Depots were reported to the Board in the course of 1948-9.

**104. Water softening.**—During the year under review one more water softening plant was installed by the Bombay, Baroda and Central India Railway.

## CENTRAL STANDARDS OFFICE FOR RAILWAYS

**105. Civil Engineering Wing.**—Investigations were carried out and designs were prepared for a large number of civil engineering works including bridges, track, structures, signalling and interlocking and buildings.



The activities of the Standards Committee were considerably increased by the formation of two additional committees, namely, the Structures Standards Committee and the Building Standards Committee. There are now five Standard Committees in the Civil Wing, namely:

- (a) The Bridge Standards Committee,
- (b) The Structures Standards Committee,
- (c) The Track Standards Committee,
- (d) The Signalling and Interlocking Standards Committee,
- (e) The Building Standards Committee.

The more important items dealt with by these Committees are referred to separately.

The Civil Engineering Wing was consulted by the Railway, as well as by the Railway Board on a large number of technical problems and have had to undertake the functions of Consulting Engineer to the Railway in a small way. The work done by the Civil Engineering Research Wing is given in paragraph 107.

Considerable expansion in civil engineering research work in the near future has been arranged and necessary equipment ordered to enable the four branches, Structural, Track, Soil Mechanics, and Buildings, of Civil Engineering Research to tackle current railway problems. Amongst the more important equipment for which orders have been placed, or for which arrangements are in hand are additional calibrating equipment, rolling bed fatigue testing machine, photoelastic equipment, additional equipment for soil mechanics research, and equipment for carrying out research in the latest techniques of reinforced concrete.

A revised Track Manual was issued.

The technique of pre-stressed concrete has been used for designing railway girders, and girders of 60 and 40 spans have already been installed successfully. Exhaustive research is in hand on this type of construction. The introduction of pre-stressed concrete girders on the Railway will result in a considerable saving in steel. Design of 100 Broad Gauge spans are in hand.

The Civil Engineering Wing participated actively in

- (a) the preparation of an All India Code of Practice for reinforced concrete by the Indian Standards Institution,
- (b) the preparation of a Code of Practice for Road Bridges by the Indian Roads Congress,
- (c) the Weights and Measures Committee of the Indian Standards Institution,
- (d) the preparation of Indian Standards Specifications for cement, reinforcement, etc., and
- (e) the research meetings of the Central Board of Irrigation.

The more important designs undertaken during the year included—

#### *Bridges—*

- (a) Pre-stressed concrete girders for 60' and 40' M.G. M.L. Standard,
- (b) Pre-stressed concrete girders for 40' and 100' B.G. M.L. Standard,
- (c) Reinforced Concrete slab for 20 ft. M.G. M.L. Standard,
- (d) 60 ft. span B.G. M.L. Standard (H.T.S. and welded types).

#### *Structures—*

- (e) Road-rail deck bridge using aluminium alloys,
- (f) Rigid frame 30 ft. goods shed,
- (g) Flood lighting tower 100 ft. high.

*Track—*

- (k) 1 in 12 and 1 in 8½ left turnout with spring crossing (without helical springs) and 21 ft and 15'6" over-riding switch for 90R R.S.S. respectively.
- (l) Pre-stressed R.C. sleepers B.G. Class C.
- (j) Two way keys bearing plate anti-creep cast iron for B.G. 90R.
- (k) 6" deep section of 90 lb., 80 lb. and 50 lb rails and fishplates

*Signalling and Interlocking—*

- (l) Signal arms and adjusting sleeves

*General—*

- (m) Publication of Indian Railways Standard Code of Practice for the construction of reinforced concrete structures for the storage of liquids.
- (n) Issue of a revised edition of the Steel Structures Code and a number of correction slips to the Reinforced Concrete Code and Steel Structures Code.

**106. Mechanical Engineering.**

(A) *Locomotive Design and Standardization*—During the year, the more important drawing and design work undertaken included the following items:—

- (a) arrangement of radial arm spring controlled front truck with friction slides for new broad gauge locomotives.
- (b) tentative diagrams of WL, WS, YG, YL, YM, YP and YS Class locomotives for forwarding to C.M.E.s with a view to obtaining comments before finalization.
- (c) preparation of draft Particular Specifications for WG, WS, YG, YL, YM, YP and YS Class locomotives.
- (d) preparation of Master lists of Spares for WP, WG, YB, YP, YG, ZB, and ZL Class locomotives.
- (e) arrangement drawings for spring loaded intermediate draw and bulling gear between engine and tender with draw bar passing through the centre of the rubbing blocks for WP, WG, YP, YG Class locomotives.
- (f) preparation of designs of Emblems for Ministers' and Railway Board's Saloons and R.M.S. vans.
- (g) limit of wear sizes and application of tyres to carrying wheels of MAWD Class locomotives.
- (h) preparation of statement of electrodes in use on railways
- (i) preparation of Tables regarding rationalization of locomotive power and particulars of future broad and metric gauge locomotives.
- (j) arrangement drawing for application of asbestos insulating material to clothing sheets in connection with the agenda for the I.R.F.C.
- (k) arrangement drawing to permit provision of secondary air from firebox sides below the level of the firebrick arch in connection with the agenda of the I.R.F.C.
- (l) normal work of the locomotive drawings office in keeping the standard drawings of locomotives up to date.

(B) *Carriage and Wagon Design and Standardization*—The more important Carriage and Wagon drawings and design work undertaken during the year, are given below:

- (a) design of M.G. cattle and goods wagon,
- (b) interior layout and profile of B.G. and M.G. coaches,
- (c) interchangeability of M.G. couplers (I.R.S., I.R.C.A., U.S.A.),
- (d) modifications to Watson type bogie,
- (e) preliminary design of 12,000 carbon bogie type wagon, BHP type,
- (f) the normal work of the Carriage and Wagon drawing office in maintaining Standard Drawing of Rolling Stock.

## RESEARCH

### 107. Civil Engineering Research.

#### (A) *Structural Research.*

(a) *Tests on Batter Plated Struts*—The Indian Railway Standard Code of Practice for the design of railway bridges contains regulations for the design of latticed struts, but no rule were laid down for the design of batter plated struts. Welding is being increasingly employed in fabricating steel structures as thereby considerable economy in the use of steel is obtained.

Investigations and tests were carried out on 16 half scale columns, the size of which corresponded to the proposed 150 ft. girder spans for the Maki Bridge on the Bombay-Bombay and Central India Railway. As a result of these tests, rule for the design of strut with welded batter plates were framed.

(b) *Tests on trough sleepers on bridge*—Trough sleepers for bridges have been designed but before standardizing, tests were carried out on two spans, one fitted with isolated trough sleeper and the other with continuous troughing. A few condemned worn, loaded to capacity were derailed and stresses in the troughs measured.

From these tests, it is found that isolated trough can be more easily removed and repaired and as they are also lighter, they are preferable to continuous troughing.

(c) *Prestressed concrete girder span*—Owing to shortage of steel, Railways could not obtain steel girder spans for maintenance works as well as for construction. Investigations have been carried out for substituting prestressed concrete girders in place of steel girders and arrangements were made for supplying prestressed concrete girder spans for the Assam Rail Link Project. Before finally standardizing the prestressed concrete girder spans, it was considered advisable to ascertain the factor of safety and the strength of the prestressed concrete girders under overloading, and a 40-ft. span is, therefore, being constructed at Kalvan on the Great Indian Peninsula Railway, for testing.

#### (B) *Track research*

All the available experimental data are inadequate to determine the optimum sleeper density for various types of sleepers. In order to determine the minimum sleeper density with every type of sleeper and also to ascertain the lateral strength of track with different types and varying densities of sleepers, test lengths of track have been provided. These test lengths will also enable experiments to be carried out to ascertain the buckling factor of the long welded rail.

#### (C) *Building research—*

With a view to economy in construction, exhaustive experiments were carried out on (i) stabilized pise and adobe construction, (ii) precast unreinforced roof section, (iii) waterproof plasters and (iv) an economical "Chula".

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**(D) Soil Mechanics research-**

With the equipment now available, all the basic properties including shear strength of soil can be determined and stability of banks and cuttings and the bearing capacity of foundation can be ascertained.

Investigation of the stability of Pier Nos. 2 and 3 of the Malaviya Bridge at Kasli has been carried out.

Sub-soil conditions for the proposed Ganga Bridge at Mokameh have been investigated at site and the bearing capacity of the sub-soil has been estimated from the experience on other constructions with similar conditions.

**108. Mechanical Engineering Research.****(A) Locomotive Research**

The Dynamometer Car was engaged on a series of trials with XE locomotives on the East Indian Railway in order to determine the effect of the fitting of mechanical stokers on firing rates, combustion efficiency, boiler output, and overall boiler efficiency. Trials were made with Standard 'HF' and Berkeley 'B' type stokers and much useful data were collected on the comparative performance of these two designs.

Comparative injector trials were carried out with the object of determining the capacity of the different types of injectors at different boiler pressures and feed temperatures. The data collected included useful information on the thermal efficiencies of the injectors. The trials covered two proprietary designs, viz., the Graham & Craven RCWL Injector and the Nathan Injector, in addition to the Standard HRS Simplex Injector. An improved design of the HRS Simplex Injector was worked out for the purpose of these trials.

The Research staff were also engaged in the preparation of a number of technical notes for the second meeting of the Indian Railway Fuel Committee. The work done included a detailed analysis of the relation between firing rates and locomotive performance with the object of providing railways with a basis for scientific trip rationing of coal for passenger and goods services.

Oscillation trials were carried out on AWD CWD locomotives in order to measure the flange forces set up at high speeds of operation and to study the effect of varying degrees of lateral hand truck control on the stability of the locomotives. From the result of the flange force measurements and the riding tests the maximum permissible speed for these locomotives was fixed at 45 m p h.

Oscillation trials of WM locomotives were conducted to ascertain their riding qualities. From the results of the tests, it was found that these locomotives run very steadily at all speeds up to 65 m p h and that the flange forces do not exceed 41 per cent of the axle loading. In consequence these locomotives have been permitted to run at unrestricted speeds.

Oscillograph Car trials were also carried out with the prototype W locomotives in order to investigate the propensity of these engines to excessive vertical oscillation at the rear end. The cause of the excessive vertical oscillation was found to be an unusually large pitching couple and the intermediate drawgear was redesigned in order to reduce the latter. The modified intermediate drawgear has since been fitted on the WP locomotives and has been found to be entirely successful in eliminating the objectionable oscillations.

**(B) Carriage and Wagon Research** Stress tests of the new design light-weight wagons were carried out. Designs were modified in the light of the data collected and further tests will be done next year before the de-

(C) *Fuel Research*—During the year it was decided to set up a new research unit for fuel research. Up till now, the Dynamometer Car has had to be used for all fuel research even when the test did not require the use of the dynamometer. The equipment being provided in the Fuel Research Car, will enable measurements to be taken, without the necessity of taking out the Dynamometer Car, of fuel consumption, fuel consumption, fuel gas analysis, pressure and draught, turbo-charger, superheater, steam chest and exhaust temperatures, and speed.

The Fuel Research Unit is expected to start into the new year when it will be possible to release the Dynamometer Car for other important work and to make more rapid progress with the research programme.

In view of the vital importance of economising on the fuel bill of the Indian Railways, amounting now to over Rs. 22 crores a year, approximately two and a half times the pre-war figure, it was decided to set up the Indian Railway Fuel Committee. The Committee's object is concerned with the task of co-ordinating all railway fuel research, and to determine the best methods for locomotive fuels and fuel trials, the collection of data on the properties and behaviour of different coals, and their suitability for various train services, the preparation of a report on the best methods for locomotive use, the rationalization of the coal supplies and the distribution policy, research into the efficient use of coal, the use of low ranking coal, the determination of the relationship between calorific value, power ratings and fuel time rates for different classes of locomotives and different coals in order to provide a basis for efficient train services and for comparing the efficiency and economic suitability of coal, oil, diesel, gas and electric traction for particular services. The tasks of the Committee are: (a) to determine the efficiency and economic suitability of coal, oil, diesel, gas and electric traction for particular services; (b) the study of the fuel consumption of the Indian Railways and investigation of means for decreasing consumption, especially on the economic possibilities of oil bench steam and diesel traction; (c) the possibility of utilizing coal slack for locomotive fuel; (d) the study of the problems such as the transport and efficient use of fuel; (e) the carrying out of research into the possibilities of different fuels, and the examination of effective control on leakage of fuel; (f) the examination of the Locomotive Standards Committee with a view to ensuring that a shift from existing locomotives and design of new locomotives is made to the minimum fuel economy; research into the economic possibilities of the use of alternative fuels and the study of alternative forms of traction such as gas turbines traction and electric traction.

(D) *Metallurgical and Chemical Research*—Several trials of joining compositions, including those received from the Council of Scientific and Industrial Research, were carried out. Research in connection with the composition devised by the Central Standard Office has progressed nearly to the final stage. The latest modification of the C.S.O. formula promises success in performance.

The British Cast Iron Research Association and the British Non-Ferrous Metals Research Association were consulted on various subjects relating to foundry problems on Indian Railways. A number of trials on sprayed metals were carried out. Research on Copper-Silicon bronzes, which was held in abeyance, has been taken up and planned.

**109. Indian Railway Fuel Committee.**—The Indian Railway Fuel Committee is composed of one representative from each of the Class I Railways and representatives of the Fuel Research Institute, the Coal Commissioner and the Chief Mining Engineer, in addition to the Research Officer (Mechanical), who is the *ex-officio* Secretary. The Committee held two meetings during the year. The deliberations covered a wide range and the subjects discussed included the following:—

- (a) examination of locomotive coals being supplied to the different Railways for similar services and the experience of suitability.

- (b) rationalization of the coal grading and coal supply policy;
- (c) evolution of a standard specification for locomotive coals;
- (d) consideration of ways and means for implementing the decision to replace gradually the supplies of coking coals to Railways by non coking coals;
- (e) investigation of the possibility of using pulverized fuel in locomotive fireboxes,
- (f) investigation of the possible economies resulting from the use of Feed Water Heaters, Kylchap type front ends, devices for the introduction of secondary air into the fireboxes and boiler lagging;
- (g) survey of the use of coal on Railways for other than locomotive purposes and the possibility of effecting economies,
- (h) examination of the fuel statistics of the Railways with the object of investigating causes of abnormal consumption and suggesting remedies, and
- (i) consideration of methods for increasing the yield of such by products as cinder and smoke box char, including the question of their utilization.

The Committee were of the opinion that the existing Fuel Control Organizations on many Railways were inadequate and recommended that each Railway must have a permanent organization under the control of a Fuel Officer of at least Senior Scale rank assisted by a junior officer or a Senior Fuel Inspector. The Committee laid down a model organization suitable for a railway with 1,000 locomotives on the line and suggested that the existing Fuel Control Organizations be expanded to conform to this scale. A great deal of progress has been made in planning and suggesting means for effecting economy in fuel consumption, but as most of the schemes are yet in the developmental stage, it is not possible to assess the results so far achieved. It is, however, hoped that as and when these schemes are finalized in course of time, considerable savings will accrue.

The principal factors which continue to contribute to higher consumption are—

- (a) inferior quality of coal supply,
- (b) abnormal increase in the number of supplying collieries, whereby drivers are continually being issued with different varieties of coal resulting in inefficient handling and firing due to the impossibility of training engine crews in the proper firing technique applicable to the particular variety of coal,
- (c) large number of locomotives of obsolete design which have had to be retained in service beyond the limit of economic life owing to difficulty in the supply of new locomotives;
- (d) difficulties in the efficient maintenance of the locomotives in service on account of the scarcity of materials and spare parts.

These difficulties are being gradually overcome. With regard to the first two factors, the Indian Railway Fuel Committee endeavoured to impress upon the Coal Commissioner the necessity for the early introduction of a rational distribution scheme and of tighter control on the quality of coal supplied. There are, however, difficulties in reducing the number of supplying collieries as, in the opinion of the Coal Commissioner, this would seriously jeopardise the interests of the smaller collieries. With regard to the last two factors, the situation is improving with the placing in service of new locomotives and a progressive easing of the supply situation regarding materials and spare parts.

As regards the implementation of the recommendations of the Indian Coalfields Committee, 1946, for the gradual manufacture of coking coals from Railway supplies and their conservation for metallurgical purposes, the new designs of standard locomotives evolved in the early 1950s are already being equipped with firebox outlets for burning a high grade semi-coking and non-coking coals. As the number of these locomotives in service progressively increases, the requirement of coking coals can be automatically reduced and finally eliminated.

The Ministry of Industry and Supply have been advised that the Railways were prepared to supply up to 10 per cent of their requirement of metallurgical coals to the A and B Grades, provided adequate quantities of semi-coking coals were allotted to them. The whole question of supply of metallurgical coals is being considered by a Committee appointed by Government in the Ministry of Industry and Supply.

### STANDARDIZATION COMMITTEES

**110. Civil Engineering Wing.** Reference is made in the following paragraph to the types of subjects dealt with by the various Standards Committees. The number of subjects covered by the Standards Committees, but only a few of the more important ones.

#### *Bridge Standards Committee*

- (a) Design of steel truss and girder bridges, etc., and the standardization of materials.
- (b) Design of prestressed reinforced concrete bridges to meet highway loading for all traffic loads and standardization of design to obtain economy.
- (c) Design of aluminium deck structures for road and deck bridges.
- (d) Design of prestressed concrete bridges for all main line bearing

#### *Structures Standards Committee*

- (a) Construction of structure in aluminium alloy with its inherent lightness, comparative freedom from corrosion, adequate strength, etc.
- (b) Consideration of welded types of structure with a view to effecting economy in steel by adopting rigid frame design methods.
- (c) Rapid and economic method of preparing structure for painting by flame cleaning.
- (d) Rationalized and economical method of proportioning concrete with a view to increasing the strength and effecting economy.

#### *Track Standards Committee*

- (a) Design of prestressed concrete sleepers in order to overcome the shortage in metal and timber sleepers.
- (b) Evolution of stronger and lighter fish plate sections with a view to effecting considerable economy in steel in track. 80 lb. rails with a strength nearly equivalent to those of existing 90 lb. rails and fish plates have been evolved, and similarly, 50 lb. rails and fish plates with strength nearly equal to those of existing 60 lb. rails and fish plates have been evolved in the Central Standards Office.
- (c) Consideration of the length of welded rails particularly with regard to buckling of tracks.

- (d) Revision of the existing nomenclature for density of sleepers with a view to making it more natural
- (e) Consideration of mechanical track appliances with a view to increasing the efficiency in maintenance and reducing labour costs

#### *Signalling and Interlocking Standards Committee—*

- (a) Standardization of multiple aspect signal fittings.
- (b) Consideration of double wire signalling and signal arms
- (c) Enlarging the sphere of the Signalling and Interlocking Standards Committee and change in its designation
- (d) Standardization of electrical signalling components.

#### *Building Standards Committee*

- (a) Method of effecting economy in building materials and alternative method of construction
- (b) Introduction of modular co-ordination in building construction with a view to mass production and standardization
- (c) Methods of effecting economy in maintenance of buildings

### **111. Mechanical Engineering Wing.**

**Locomotive Standards Committee.**—The Locomotive Standards Committee met in December 1948 and dealt with points which had arisen since 1 April 1948, in connection with locomotive designs and fittings. Recommendations were made on the following important subjects

(a) All-welded ashpan design in two pieces independent of each other, the top portion being secured to the foundation ring and the bottom carried in a horizontal plate between frames. This design of ashpan simplifies construction and has the added advantage of being able to remove the boiler without having to drop the ashpan

(b) Design of superheater header having superheat and saturated compartments in separate units. This design was proposed with a view to overcoming cracks experienced in partition walls, but it was considered that the design of superheater in one unit which incorporates air passages between the saturated and superheat passages to act as insulating spaces to preclude the possibility of cracking of the compartment walls, on the lines of the Superheater Company's 'A. M.' type was an improvement on the proposal and was adopted

(c) Introduction of spark arrester screen in smoke boxes in conjunction with ash ejector apparatus. These fittings have been introduced with a view to reducing fire hazard in coaching stock caused by sparks emitted from the locomotive entering compartments

(d) Design of the future standard metre gauge passenger and goods locomotives, 4-6-2 type 'YP' class and 2-8-2 type 'YG' class respectively. A pilot order of 20 'YP' class locomotives and a bulk order for 150 'YG' class locomotives has been placed in North America and deliveries are expected to commence at the end of 1949

(e) Acceptance of departures from I. R. S. practice in designs and features specified for the bulk orders of the 'WP' and 'WG' and 'YP' and 'YG' class locomotives on order. Adverse reports on the performance of certain designs and features subsequent to their adoption led to alternative designs and features, which have been known to give satisfactory results, being specified in the Particular Specifications for the locomotives in question.



Since this constituted a departure from existing policy, it was necessary to obtain and record the Committee's acceptance of the departure, being introduced.

(f) Apparatus for detection of flaws and inspection of materials and work of a suitable type for use in Indian Railway Workshops. The provision of such apparatus in Workshops was considered desirable by the Committee and the report of a Special Officer deputed to investigate suitable types available on the market will be considered at the next meeting.

Results of trials of experimental fittings were examined. It was considered that further experiments indicated before a conclusion could be reached in the case of 13 trials and it was decided that these trials be continued. Ten trials were closed on which some standard fittings were adopted as the future standard. One new trial was introduced to determine whether mechanical rollers can replace the rollers used in existing sections where firing capacity is improving up to 600 lbs. and the limit of 400 lbs. was reached.

Brief particulars of fittings and test results adopted as a result of satisfactory trials, are given below.

- (a) Injector steam valve on fire engine and 4 R. L. engine embodying certain improved features. The valve body has been redesigned to permit of its application on either end of the engine and both ends of the firebox and to a considerable extent simplified on the valve spindle.
- (b) Solid cast iron direct pattern produced in the form of 15 holes of less than 1". This direct pattern is of 15 holes, each adapted in superposition of a 15 hole pattern pattern of 15 holes, each adapted in centre with a 15 hole pattern of 15 holes.
- (c) Perforations for grease distribution in roller bearings and coupling rod floating bushes with attached reservoir of grease supply. The arrangement of perforation adopted, which although providing very limited grease admission area, effectively distributes the grease over the whole length of the bearing. The arrangement provides for 15 grease admission holes in the big end bearing, not one of which is of the same circumference as another. And by drilling the holes on a system of staggered spirals the surface of the bearing is completely covered by grease feeds at each revolution.

The location of grease nipples and method of grease supply has been left to the discretion of the designer as it was not considered desirable to express a preference for any particular location which may handicap the designer.

**112. Carriage & Wagon Standards Committee.**—The Carriage and Wagon Standards Committee held its 25th Meeting in February 1949 and dealt with an agenda of 61 items. Among the subjects considered by the Committee were:—

- (a) an examination of designs for the proposed all-steel lightweight coaches of 11'8" width for the Broad Gauge system and 9'4" width for the Metre Gauge system, with particular reference to the floor plans,
- (b) a study on the adoption of aluminium in carriage and wagon construction,
- (c) the interior panelling of coaches using resin-bonded plywoods and laminated plastic panels to obtain maximum reflectivity combined with a pleasing decor,

- (d) laying down standards for the interior furnishing and amenities in various classes of compartments and lavatories consequent on the reclassification of passenger accommodation enforced since 1 January 1949,
- (e) the thermal insulation of all steel coach bodies and petrol tanks,
- (f) a study of lightweight bogie designs proposed for the future 11'5" coaches,
- (g) an examination of problems attached to the provision of drinking water facilities in Class III coaches,
- (h) consideration of machine tool requirements with regard to the maintenance of future all steel coaches

**113. Electrical Standards Committee.**—The Electrical Standards Committee met during the year. A resume of the main items dealt with by the meeting is given below

- (a) The question of adopting a standard system of air conditioning for broad and metre gauge stock was discussed and, in addition to this subject, the design of ice activated refrigerator vans, domestic type refrigerators for railway coaching stock, and domestic type air conditioning equipment was also discussed
- (b) A decision was taken with regard to the adoption of the Single Battery system as the future Indian Railway Standard as against the old Double Battery system which has been the standard for many years. In addition to this, a decision was taken with regard to the modifications to the existing standard coach wiring diagram to provide for greater protection in the electrical circuit and to provide facilities for attention during service. An up-to-date load schedule for electrical equipment was also discussed
- (c) The Committee approved of the adoption of fluorescent lighting for coaching stock, but preferred to carry out trials with various types of equipment before a standard could be decided upon. Coupled with this subject was the question of the preparation of an All-India Specification to cover fluorescent lighting fittings for use in offices, station platforms, roads, etc
- (d) A recommendation was made with regard to the purchase from abroad of train lighting belting as opposed to the present supplies of indigenous belting which are not up to the required specification. It was also decided that the existing type of Walker belt fastener for train lighting belts was satisfactory
- (e) The Committee recommended that an organization be set up for the manufacture of train lighting and other electrical spare parts in the country

**114. Specifications Standards Committee.**—The Standing Committee on Standards and Specifications met during the year. A resume of the main items dealt with by the meeting is given below

- (a) A decision was taken to recommend the purchase of cotton or cotton-jute paulins for railway purposes as a result of trials carried out over a period of years
- (b) A consolidated statement of brands and grades of electrodes was considered with a view to modifying the "I. and S. Guide to Indentors" on this subject. A recommendation was made for the preparation of I R S Specification for bare and coated electrodes

- (c) The revision of I. R. S. Specifications was given consideration. Particular attention was paid to the revision of Specification No. R 6 and R 32 for Carriage Locomotives and Wagons, and Steam Locomotive Engines and Tenders, respectively.
- (d) Recommendations were made for the preparation of I. R. S. Specifications for portable tools, tools, cutting, cleaving compound, carriage and wagon roof waterproofing material, waterproof garment, oil, rope, rain coats, etc., and for the modification to the I. R. S. specifications for beam-ways.
- (e) The adoption of new grades and other materials of the same grades catered for by the old specifications was approved.

### 115. General.

(a) *Inspection of Boilers of Locomotives and Wagons.* The periodical inspection records of the locomotives and wagons of the Indian Railways, showing the progress in the out-turn and disposal of steel, I. R. and U. S. A., and 'YB' Boilers to Railways and to the factories, continued to be regularly received in the U. S. O. and it was found that the same were in accordance with the standard and accepted boiler practice.

*Loco Part Drawing Scheme.* The Railway Board have sanctioned the scheme for the preparation of comprehensive part drawings for the U. S. A. and Canada built locomotives as well as for the I. R. S. locomotives. The organization for the technical part of the scheme is in progress. For steam (East Indian and Amer-Bankers) Boilers, the technical drawing work has not yet been started owing to the non-availability of drawings.

(b) The following detailed locomotive part drawing specifications were prepared:

#### Locomotives,

1. 'WG'	Broad gauge
2. 'YP'	
3. 'YB'	Metre gauge
4. 'YG'	
5. 'ZB'	Narrow gauge
6. 'ZE'	

*Standardization of fire bricks.* With the object of standardizing fire bricks, i.e., to introduce standard bricks and arches where possible and to reduce the number of non standard bricks to the minimum, an officer on special duty has been appointed to visit all Indian Government Railways. His report is expected to be completed by November 1949.

(c) *Fuel Economy.* The Indian Railway Fuel Committee was formed during the year as part of the Fuel Economy drive which was intensified and vigorously pursued. The efforts in this direction met with a serious set-back from the latter half of 1946-7 on account of the unsettled conditions in the country owing to general labour unrest, communal disturbances and implementation of the Partition Scheme, resulting in operational inefficiency and consequent increase in coal consumption during the last two years.

With conditions gradually returning to normal, a study of the various causes responsible for increased consumption was felt necessary. The subject of fuel economy was thoroughly discussed in all its various aspects, and the Railway Administrations were instructed to give effect to the recommendations of the Committee as far as practicable.

(d) The normal work of keeping Indian Railway Standard Specifications up to date continued throughout the year. One new Indian Railway Standard Specification was issued and 18 Indian Railway Standard Specifications were revised and reissued.

The following particular Specifications for broad and metre gauge Indian Railway Standard rolling-stock and details were prepared :—

- (a) Bogie coaching underframes (broad gauge)
- (b) Bogie coaching underframes (metre gauge).
- (c) 4-wheeled underframes (broad gauge)
- (d) 4-wheeled underframes (metre gauge)
- (e) BR Type Wagons
- (f) TPR Type Patrol Tanks.
- (g) MBVG Type Brake Vans
- (h) MC Type Wagon
- (i) Dismantling, Modifying and Rebuilding metre gauge, U S A Bogie Wagons

(c) The Central Standards Office was represented on the meeting called by Director General of Industries and Supplies to discuss the requirements of oil and greases of Railways

The Central Standards Office represented the Ministry of Railways—Railway Board, on the following committees of other technical bodies

1. Central Boilers Board
2. General Council of Indian Standards Institution
3. Engineering Division Council of the Indian Standards Institution
4. Chemical Division Council of the Indian Standards Institution
5. Patent Advisory Committee of the Industry and Supply Ministry
6. Internal Combustion Engines Research Committee of the Council of Scientific and Industrial Research
7. Development Committee of the Non-Ferrous Metals Industry functioning under the Director General of Industries and Supplies.
8. Twenty Sectional and Sub-committees of the Indian Standards Institution, such as, Abrasive, Basic ferrous and non-ferrous metals, Belting and rubber products, Cement, Drawing Heavy chemicals, Lubricants, Paint and allied products, Refractories, Refrigerators, Timber product, Aluminium and its alloys, etc

*Special Committees—*

9. Special Committee on Weights and Measures
10. Bridge Committee of the Indian Road Congress
11. Research Committee of the Central Board of Irrigation
12. National Committee for India for the International Conference on Soil Mechanics
13. Committee for Standardization of Methods and Apparata for Soil Mechanics.

## STAFF

**117. Cost of Staff.** The following statement shows the number and cost of all staff, gazetted and non gazetted, permanent and temporary, open line and construction, employed on Class I Railway during the years 1947-8 and 1948-9. Labour employed by contractor is not included.

NUMBER AND COST OF STATE OF TEXAS RAILROADS, 1937 - AND 194-5

Year		1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946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\*Represents revised figures for 1917-8 due to changes made by the Railway Administrations in the figures published last year.

‡ Represents figures for whole system.

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A comparison of the figures for 1948-9 with those for the previous year shows that the total number of staff employed on the open line of Indian Government Railways increased by 13,351 during the year, while the number of construction staff decreased by 2,789.

The total cost of staff including that of staff on loan from the Indian Audit and Accounts Service increased by Rs. 15,32,42,305 during the year. Increases were recorded both in the number and cost of staff on Indian Government Railways.

The increase in the number and/or cost, as the case may be, of staff during 1948-9 is mainly due to the following reasons:

- (1) implementation of the recommendations of the Central Pay Commission including the reclassification of skilled and other workers and the introduction of revised rates for payment of allowances to running staff and the payment of arrears to the staff as a result of these recommendations;
- (2) setting up of organizations on the Railways to carry out the Award given by the Hon'ble Mr. Justice G. S. Hajadhyaksha in the trade dispute between the nine Indian Government Railway Administrations and their respective employees;
- (3) the exercise of option by railway staff in favour of cash dearness allowance in full in place of dearness allowance plus grainshop concessions previously allowed to the staff, as well as the grant of lump sum amounts to some of the staff following the acceptance of the recommendations of the Railway Grainshop Enquiry Committee;
- (4) the increase in the rates of dearness allowance;
- (5) reorganization of the Cash and Pay arrangements on the Bombay, Baroda and Central India and the Eastern Punjab Railways, and
- (6) the creation of certain new posts on the Railways and promotion of staff.

**118. Direct recruitment to the Superior Services.**—The number of appointments made to the Superior State Railway Services by direct recruitment during the year was 107. Details by departments are summarized below:

Department	Total
Engineering	27
Accounts	6
Establishment	0
Transportation, Traffic and Commercial	27
Transportation (Power) and Mechanical Engineering	31
Other Departments	1
<b>TOTAL</b>	<b>107</b>

### 119. Promotions.

(a) *Superior Services*—Eight promotions were made during the year from Class II and Class III Services. These promotions were against vacancies earmarked either for the year 1946-7 or for 1947-8, which could not be filled during the respective years.

(b) *Class II Services*—Eleven promotions were made to the Class II Service in the various departments.

## 120. Railways and Labour.

All-India Railwaymen's Federation. The relations between the Railway Administrations and labour continued to be generally cordial during the year, though the period was marked by considerable activities on the part of the All-India Railwaymen's Federation in pressing the demands of the staff.

The All India Railwaymen's Federation held its annual convention at Lillooah on 30 and 31 August 1948 at which they passed three resolutions. Resolution No. I demanded increase in cash dearness allowance to correspond with the rise in the cost of living index and protested against the curtailment in the Railway grainshop concessions. Resolution No. II referred to certain demands relating to the recommendations of the Central Pay Commission which had previously been put forward by the Federation and gave the Ministry of Railways time up to 31 October 1948 for the settlement of those demands failing which the taking of a ballot for a general strike was to be considered by the General Council. Resolution No. III requested Government to take over the administration of non Government Railways and the introduction of uniformity in their conditions of service and scales of pay.

The All India Railwaymen's Federation next held a meeting of their General Council at Nagpur on 24 and 25 November 1948 at which the Council passed certain resolutions. One of these resolutions complained against the alleged unsatisfactory fixation of cash dearness allowance and the curtailment of relief in kind. The other resolution reiterating the resolutions passed at the Lillooah Convention and complaining that Government had rejected their demands, resolved that immediate steps should be taken by affiliated unions for a strike ballot on the issues referred to in the Resolutions passed at the earlier Annual Convention held at Lillooah and that, in the event of the ballot being favourable, a notice be issued on the Railway Board to the effect that a general strike would take place by the middle of February 1949. The resolution, however, concluded by stating that the Federation were prepared for an honourable settlement.

After examining these resolutions, Government considered that many of the misunderstandings could be cleared up by a personal discussion with the Federation. The President of the All India Railwaymen's Federation was accordingly invited for a meeting with the Hon'ble Minister for Transport and Railways at Bombay on 4 January 1949 at which the following were the main subjects discussed :-

- (a) grainshop facilities;
- (b) dearness allowance;
- (c) calling off of the strike ballot,
- (d) anomalies arising out of the application of the recommendations of the Central Pay Commission to railway workers;
- (e) setting up of a joint machinery for dealing with the points in dispute between the management and workers; and
- (f) constitution of a committee for examining the anomalies referred to in item (d) above.

After the discussion, it was decided that the talks should be resumed later. Discussions between the Ministry of Railways and the representatives of the All-India Railwaymen's Federation were accordingly resumed in Delhi on 18 January 1949 and continued on 20, 21, 26 January 1949, 12 and 14 February 1949.

As a result of the decisions reached at these discussions, the All-India Railwaymen's Federation decided at their meeting held at Dinapore on 16 and 17 February 1949 to stay action on the results of the ballot for a strike. Some Unions on the East Indian, Oudh Tirhut, Eastern Punjab, Bombay, Baroda and Central India and South Indian Railways which were dominated

... decision of the Federation  
however, gave notices for a  
though there were a few  
instances of attempted sabotage.

Towards the close of the period under review, proposals for the setting up of a Joint Advisory Committee for Railways, consisting of representatives of the Railway Board and of railway labour, for dealing with points in dispute between the management and workers were being finalized.

**Strike on the South Indian Railway.** Labour trouble commenced on the South Indian Railway during the last week of April 1948 when engine crews working in certain links refused to work trains after completion of 8 hours duty. The trouble spread gradually when a token strike for 24 hours from midnight to midnight of 9 and 10 May 1948 was declared by the South Indian Railway Labour Union. Among loco shed and running staff about 3,000 employees out of a total of 8,700 joined the strike. Out of a total of 6,500 workmen employed in the workshops of the Railway at Golden Rock, only about 700 struck work. As regards other departments only a few Class IV staff joined the strike. The token strike thus proved a failure. Normal train services were maintained, except that train services were restricted on the section of the Railway affected by the strike. During the strike a few attempts at sabotage were made at certain places on the system such as by removing fish plates or otherwise tampering with the track. The situation returned almost to normal by 13 May 1948 except at a few stations. The strike, which was illegal, however, continued in a confused manner, the strikers returning to work at some places and rejoining the strike at other places until 6 June 1948, on which date all strikers except a few returned to duty and conditions of work returned to normal all over the system.

**121. Grainshops.**—In paragraph 121 of the last report, reference was made to the appointment by the Government of India in February 1948 of the Railway Grainshops Enquiry Committee with Shri Mohanlal Saxena as Chairman, and Shri K. Santanam and Shri Khandabhai Kesari Desai as Members and the terms of reference to it. It was also stated that the Committee commenced its work on 4 March 1948.

The Committee toured over Indian Government Railways, visiting grainshops, studying conditions first hand and consulting representatives of most railway unions and many individual railway workers as well as railway officials. The Committee submitted its Report to the Government of India in June 1948.

The main recommendations of the Committee are summarized below:—

(1) Each individual railway employee should be permitted to opt for the entire dearness allowance in cash as payable to other Central Government employees or for the continuance of the present cash dearness allowance in accordance with Railway Rules combined with the grainshop concessions in the revised form as stated below. Such option should, however, be exercised within two months of the acceptance of the Report by the Government and should be final and irrevocable, if it is in favour of the full cash dearness allowance. On the Eastern Punjab Railway, however, all grainshops were to be closed.

(2) A single lump sum payment on the following scale should be given to those workers drawing a basic pay of Rs. 50 per month or less, who opt for the full cash dearness allowance, if option is exercised by them within the stipulated period of two months as referred to in item (1) above.

	Rs.
'A' Area—Kanpur, Bombay and Calcutta	120
'A' Area—Towns having a population of 250,000 each	90
'B' Area—Towns having a population of 50,000 or more but less than 250,000	60
'C' Area—All other localities	30



(3) That the grainshops should be retained for those who do not exercise the option as a temporary expedient, but should be restricted to the supply of five essential articles, namely, cereals, pulses, cooking oils, salt and matches.

(4) Except in areas where there is statutory rationing, railway workers should be free to take their entire cereal ration in wheat or rice of medium quality, the scale of ration for every worker being increased from 12 ozs. to 16 ozs. per day, which is the existing standard ration for a heavy manual worker. The scale of ration of other members of the worker's family, however, should remain at 12 ozs. per day as at present.

(5) The selling prices of the commodities should be uniform all over India and should be as follows:

	Rs.	as	ps
(a) Cereals: wheat and rice per seer	0	2	6
(b) Pulses per seer	0	4	0
(c) Cooking oils per seer	0	8	0
(d) Salt per seer	0	1	0
(e) Matches per box	0	0	6

(6) That the sale of commodities at concessional rates should be confined to railway staff drawing a basic pay of less than Rs. 250, and grainshops should discontinue the practice of supplying commodities to other staff at non-concessional rates. Casual labour should be paid at market rates and all new recruits to railway service should be paid their dearness allowance entirely in cash at the scale prescribed for other Central Government employees and should be excluded from the privilege of the grainshop concessions.

(7) Procurement of wheat and rice, instead of being made by the Railways themselves in the open market should be undertaken by the Ministry of Food of the Government of India, while the arrangement for the supply of matches should be made by the Railway Board direct from match factories to the Railways. The procurement of pulses, cooking oils, and salt should be through open tenders called by Joint Purchasing Committees of Railways consisting of Grainshops Officers, Accounts Officers and two representatives of Labour Unions.

(8) Participation of staff in grainshop management should be secured by the setting up of Committees attached to each grainshop, consisting mainly of representatives of railway workers.

(9) The setting up of Cooperative Stores by Railway workers should be encouraged.

A copy of the Report of the Railway Grainshops Enquiry Committee was sent to the Indian Railway Enquiry Committee for their views. The latter suggested that the grainshop organization should be wound up and the staff compensated for the loss of the measure of relief in kind then received by them. The Committee also made certain other recommendations.

After examination of the recommendations contained in the report and the views of the Indian Railway Enquiry Committee thereon, the Government of India in their Resolution No. E(F) 48 (FR 2(43), dated 28 October 1948 promulgated their decision to accept the recommendations of the Railway Grainshops Enquiry Committee subject to the following modifications:—

(a) The quantity of the cereal ration should be in conformity with Provincial Rationing Rules, but the difference between the quantity of 16 ozs. per day for the worker and 12 ozs. per day for each adult member of his family and the quantities allowed by the rules should be made up by an addition in the pulse ration equal to half this difference.

(b) The grainshops should be continued on the Eastern Punjab Railway also on the same terms as on other railways, and the staff of the Railway be permitted to exercise individual option in favour of the entire dearness allowance in cash or for the continuance of relief in cash and kind, in the same way as employees on other Indian Government Railways

(c) The decision of Government regarding the recommendation in respect of the setting up of co-operative stores by the Railway employees be deferred pending its further examination

With a view to assisting the staff concerned, orders were issued that the staff residing in rationed as well as non rationed areas should both be permitted to draw cereal ration only at the retail controlled prices fixed by the Civil Authority for that Area or controlled prices fixed for the contiguous rationed or controlled areas at the scale of 12 ozs. per adult worker and his dependent and 4 ozs. additional for the classified heavy manual worker or the scale prescribed by the Provincial State Government concerned

From a review of the position made it was found that out of 780 575 employees eligible for exercising option, only 763,760 had opted to continue under the Railway Grainshops, the remaining 122 815 having opted out of the grainshops

The statistics given below indicate the principal activities of the grainshops organization :—

(1) No. of shops functioning—	In March 1949
State . . . . .	148
Mobile . . . . .	141
Total.	289
(2) No. of ration card holders dealing at the shops—	
At concessional rates . . . . .	413,000
At controlled rates . . . . .	200,000
Total.	613,000
(3) Principal articles sold during the year (in maunds)—	
(a) Cereals . . . . .	9,068,000
(b) Pulses . . . . .	3,070,000
(c) All cooking media . . . . .	817,000
(4) Cost of purchases of all grainshop articles during the year	Rs. 10,03,78,000*
(5) Total amount realized on sales . . . . .	Rs. 17,57,72,000*
(6) Losses during the year—	
(a) Direct loss (on purchases)	Rs. 25,34,74,000*
(b) Indirect loss (on staff, freight, etc.)	Rs. 3,15,67,000*
	In March 1949
	Rs. as p
(7) Average cost of purchases per employee . . . . .	29 2 0
(8) Expenditure incurred by railways per employee—	
(a) On sales . . . . .	21 6 0
(b) On all overheads . . . . .	3 14 0
	Zone
	X 21 9 0
	Y 23 13 0
	B 23 1 0
	C 25 18 0
(9) Average relief enjoyed per employee	

**122. Canteens.**—Reference was made in paragraph 122 of the last report to the progress achieved by railways in the establishment of canteens for the workers with a view to improving their working conditions by the provision of inexpensive and nourishing meals or snacks at their places of work. Twenty-six more such canteens were opened on the Indian Government Railways, bringing the total number of canteens at the close of the year under review to 52. The number of staff who patronized the canteens was on an average 53,000 per day. Most of the canteens served tea and other beverages and light snacks, while in a few full meals were also made available.

**123. Dearness allowance.**—In paragraph 123 of the last report the scales of the dearness allowance, as they stood at the close of the year 1947-8 were given. During the year under review, following Government's decision to grant an increase in the rates of dearness allowance applicable to Central Government employees, the increased scales stated below were sanctioned in the case of railway servants drawing a basic pay not exceeding Rs. 250 per month with effect from 1 January 1949.

I. FOR RAILWAY STAFF ON THE CENTRAL PAY COMMISSION RATES OF DEARNESS ALLOWANCE

Pay	Dearness allowance
Rs.	per mensem
Rs.	Rs.
Up to Rs. 50	35
51-100	45
101-150	50
151-200	55
201-250	60

II. FOR RAILWAY STAFF ON RAILWAY RATES OF DEARNESS ALLOWANCE AND ELIGIBLE FOR GRAINSHOP CONCESSIONS

17½ per cent of pay *plus* Rs. 5 per month subject to the following minima.

	Rs.
X Area—Pay below Rs. 40	24
Rs. 40 and above	25
A Area—Pay below Rs. 40	22
Rs. 40 and above	24
B Area—Pay below Rs. 40	19
Rs. 40 and above	21
C Area—Pay below Rs. 40	17
Rs. 40 and above	19

**124. Railway staff and the War.**—In paragraph 124 of the last report it was stated that on 31 December 1947 the number of Railway staff on deputation to the Ministry of Defence was one gazetted and 441 non-gazetted. During the year under review the release of railwaymen amounted to 62, leaving the number of railway staff on deputation with the Defence Ministry on 31 December 1948 as one gazetted and 379 non-gazetted. An appreciable improvement in the release of railwaymen is expected in the ensuing year.

**125. Railway Service Commissions.**—The four Railway Service Commissions at Madras, Calcutta, Bombay and Lucknow were mainly engaged in recruiting Class III staff for Railways and in advising on the appeals received from Class III staff which lie to the General Managers. The reports called for from the Railways and Service Commissions regarding the working of the system under which the Service Commissions advised on appeals were being received towards the end of the year. In addition to the work already handled, the East Indian and Oudh Tirhut Railways Joint Service Commission, Lucknow, was entrusted with the recruitment of Class III staff required by the Eastern Punjab Railway to implement the Adjudicator's Award.

The Indian Railway Enquiry Committee had recommended the abolition of the Commission at Lucknow and reduction in the strength of Members in each Commission. The recommendations are receiving the consideration of the Government.

**126. Anti-Corruption Organization.**—A vigorous and determined drive to combat bribery and corruption was continued during the year. The existing arrangements were reviewed and a scheme was evolved by the Railway Board with the object of coordinating the activities of the Special Police Establishment and those of Railway Administrations, and tightening up the executive machinery dealing with the detection and investigation of cases. The salient features of the scheme are —

(a) setting up of organizations to suit local conditions for the prevention, detection and departmental investigation of corruption on each railway.

(b) merely departmental or procedural irregularities resulting in preferential treatment to traders, travellers, contractors or firms should be ordinarily enquired into and disposed of by the Railway Administration concerned. If, however, there is reason to think that receipt of some monetary or other consideration can be established against the railway staff concerned with these irregularities, the cases should be handed over to the Special Police Establishment without delay.

During the year, 297 cases were taken up by the Special Police. Of these, 37 were sent up for trial in courts or before Tribunals, and conviction of 31 persons was secured. This brings the total number of cases so far taken up to 915. In 42 cases, the evidence was not considered sufficiently strong to secure conviction of the railway employees concerned in a court of law and these were referred to Railway Administrations for departmental action. As a result three employees were discharged. In order to keep the public and the general body of railway servants informed of the measures taken and the progress made in this behalf, press notes were issued from time to time, stating the number of convictions obtained, and emphasizing the fact that both the acceptor and tenderer of bribes were liable to punishment under the Law. In addition, individual railways also continued to take action in this respect on their own initiative.

**127. Labour Legislation.**—The two Acts concerning railway servants were passed during the period under review namely (1) The Factories Act 1918, and (2) The Employees State Insurance Act 1918. The Factories Act 1918, mainly a consolidating and revising Act, was to come into force on 1 April 1919. The main provisions of this Act with which Railways were concerned were those relating to the exclusion of railway running sheds from its scope and the exemption of staff employed in workshops from the provisions of Chapter VIII thereof, relating to holidays with pay. These provisions, while not depriving the staff concerned of any important and substantial privileges, were expected to result in administrative convenience.

The Employees State Insurance Act provides for the grant to workers of sickness benefits, maternity benefits, and sick leave with pay subject to certain conditions. The question of the application of provisions of this Act to workmen employed on Indian Government Railways was under consideration during the year.

**128. Staff Councils.**—It was mentioned in last year's report that Section 3 of the Industrial Disputes Act 1917, and Part V of the Industrial Disputes Rules 1917 had provided for the constitution of works committees consisting of representatives of employers and workmen in industrial establishments but that the question whether staff councils and similar bodies functioning on Railways might be allowed to continue in their existing form and constitution was under consideration. This question was further examined during the year though no final decision was reached.

**129. Provision of quarters for railway staff.** As stated in the last report, it was decided to construct four types of quarters for providing residential accommodation for the railway staff viz., *A*, *B*, *C*, and *D* of enclosed type having verandahs. The progress made on the construction of new quarters was, however, not quite satisfactory, and, in order to expedite their construction, greater discretion was given to railway administrations regarding the design and specifications of the quarters, on the condition that these quarters should be built as cheaply as possible, with a life of at least 15 years.

Further, in consideration of the acute shortage of building materials and the limited resources, and with a view to constructing as large a number of quarters as possible within the funds available, it was decided that no new *C* and *D* type quarters should be constructed at present. *B* type quarters were to be constructed, if in the opinion of the General Manager the provision of such quarters was inescapable. This enabled the concentration of available resources mainly on the construction of the lowest type of quarters, viz., *A* type for essential operating staff.

**130. Progress in implementation of the Adjudicator's Award.**—The Hon'ble Mr. Justice Rajadhyaksha's Award in the trade dispute between the nine Indian Government Railway Administrations and their respective workmen was published in May 1947. After consideration by Government, orders accepting the Award in respect of the first three terms of reference, viz., hours of work, periodic rest and leave reserves, were issued in June 1947. Instructions were issued to Railway Administrations to implement the Award in five phases at six months' interval commencing from 1 November 1947, the implementation in respect of Class IV staff being completed in two phases, Class III staff, except loco running staff, in three phases and loco running staff in five phases. The Hours of Employment Regulations would also be revised to accord with the Award.

The number of additional staff required to implement the Award is roughly estimated to be nearly 100,000 men, involving a recurring cost of more than Rs. 10 crores per annum, besides a non-recurring expenditure which may amount to more than Rs. 40 crores for staff quarters, additional terminal facilities, etc. With a view to limiting the additional expenditure and to meet the Indian Railway Enquiry Committee's observation that surplus labour existed on Railways, the Railway Administrations were asked to carry out a job-analysis to assess the surplus personnel that could be absorbed in the implementation of the Award before recruitment was made from other sources. Provision has been made for absorption of the Indian nationals returning from Burma on grounds of alien nationality and of 15,000 men from among the displaced persons from Pakistan in vacancies arising out of the implementation of the Adjudicator's Award.

**131. Progress in implementation of the Central Pay Commission's Recommendations.**—In the course of the year, the prescribed scales were allotted to a large number of the remaining categories of staff, thereby bringing most of the posts on the Indian Government Railways into a single pay structure in accordance with the Central Pay Commission's recommendations.

A contentious point arose regarding the classification of artisan staff into skilled and semi-skilled. The wide disparity in practice amongst the Railways in this matter made it necessary to appoint a Tribunal on which Labour and Railways were represented under a neutral Chairman nominated by the Ministry of Labour. The Tribunal was charged with classifying artisans as skilled and semi-skilled, and evolving as far as possible, uniform designations for staff performing the same kind of duties. The Tribunal visited the different railways and reported on 28 May 1948. Orders accepting the report were issued immediately, and have since been implemented.

Some staff were discontented because of certain anomalies which had arisen out of the application of the Central Pay Commission's recommendations, and the Railways were directed to discuss the matter with the Unions affiliated to the All-India Railwaymen's Federation. Cases of hardship, if any, were also included within the scope of the points for discussion. The Unions raised a large number of points, of which about 80 were found to be cases of genuine hardship or anomalies. These were fully examined and dealt with. Others, which were mainly of the nature of demands for upgrading posts or revision of the scales, were also considered. The disposal of these cases formed the subject of discussion at meetings of the All-India Railwaymen's Federation with representatives of the Board from 10 to 12 August 1946.

Subsequently, the All-India Railwaymen's Federation in their Annual Convention held at Lilleah on 30 and 31 August 1948 raised *inter alia* some 20 points arising from the Central Pay Commission's recommendations which required attention.

The main issues raised by the Federation were discussed by the Hon'ble Minister for Railways with the President of the All India Railwaymen's Federation at meetings held in Bombay and later in New Delhi in January and February 1949. The more important issues discussed were—

- (a) fixation in the prescribed scales of pre 1931 entrants in cases where their scales were lower than post-1931 scales,
- (b) weightage for service rendered in the same category of service,
- (c) constitution of an Anomalies Committee to consider cases of anomalies and hardships,
- (d) extension of house-rent and compensatory allowances,
- (e) confirmation of temporary staff,
- (f) scales of pay for school staff;
- (g) payment of casual labour,
- (h) leave rules; and
- (i) improvement of conditions of service of temporary staff

Examination of these issues was started immediately and was proceeding at the close of the year.

Another Committee was appointed during July 1948 with Mr. D. P. Mathur as Chairman to review the prescribed basic scales for running staff and the existing running allowance and running allowance rules for appointment Railways. The Report of the Committee who made a further improvement in the scales of pay and allowances, and orders were issued in December 1948. For the first time, uniform scales of pay and running allowances have been introduced on all the Indian Government Railways.

**132. Training of staff.**—As referred to in paragraph 131 of last year's report, instructions were issued to the railways to establish training schools where they do not exist, or to effect modifications in the existing schools in order to meet present-day requirements. During the year, the recommendations of the Indian Railway Enquiry Committee 1947, contained in paragraphs 78-9 and 97 of their report, on the improvement of training facilities for railway staff, including unskilled staff, have been under consideration

**133. Resettlement of demobilized ex-servicemen in reserved vacancies.**—Recruitment of ex-servicemen against 70 per cent of the vacancies, which occurred during the period 1 June 1942 to 31 December 1945, and which were reserved for war service candidates to be recruited after the war, was completed during the year. A total of approximately 32,315 ex-servicemen have been recruited against these vacancies on the Indian Government Railways with the exception of the Assam Railway. No recruitment of ex-servicemen has been made on the Assam Railway, as the railway was formed as the result of the partition of India and it has not been possible, to determine what its share of war service vacancies existing on the ex-Bengal Assam Railway would have been and how many of these had already been filled prior to partition. The figure stated above does not include the number of ex-servicemen recruited by the pre-partitioned North Western and Bengal Assam Railways.

**134. Activities of the Medical Department.**—A brief account of the formation and activities of the Medical Department on Indian Government Railways was given in paragraph 133 of the last report. Consideration of the report on the reorganization and development of medical services on Indian Government Railways was still in progress, during the year, along with the general question of the policy to be adopted in regard to medical arrangements on railways in future.

The activities of the Medical Department during the year continued to be well maintained. On certain railways, there have been extensions to the existing hospitals, increase in the number of beds and additions to important equipments, such as X-ray apparatus and electro-medical apparatus. On many of the railways blood transfusion services were newly started, teams were formed and training was completed. Blood transfusion circulars and equipment were supplied to certain hospitals. Vitamin products were supplied free of cost to indigent railway patients on certain Railways. On almost all railways special attention was paid to the examination of school children.

During 1948-9, the rules for medical attendance and treatment for railway employees were liberalized to an appreciable extent. These concessions were extended to the families of railway servants on the same scale and conditions. Provision was made in the rules for free treatment of maternity cases, including pre-natal and post-natal treatment, in a number of recognized non-railway hospitals.

## CHAPTER VIII

### AMENITIES FOR PASSENGERS

**135. General.**—The provision of amenities for the comfort of passengers continued to receive the attention of railways. Certain amenities provided during the year on the principal railways are referred to in the following paragraphs.

**136. New Class III Carriages.**—190 new Class III carriages conforming to the approved standard design laid down in 1939 were constructed and placed in service as against 105 during the previous year.

**137. Booking Offices and out-agencies.**—Additional booking facilities for the greater convenience of passengers were provided at different stations as indicated below.

*Bombay, Baroda and Central India Railway.*—City booking offices were opened at Baroda City and Bombay (Mohamedali Road) during the year. Out agencies were also opened at Jawhar, Dharampur, and Shapur.

*East Indian Railway.*—Additional booking windows were opened at nine principal stations. Arrangements were also made for keeping booking offices at stations open for continuous booking at Bhagalpur, Dhanbad and Baidyathdham. The city booking office at Patna was opened to ease pressure at Patna Junction. It has also been decided to reopen the out agencies at Lohi, Sikandarabad, Dumka, Jhangirabad, Khagaria, and Dumka.

*Eastern Punjab Railway.*—With a view to providing additional booking facilities for the public, the existing booking agencies at Meerut City, Saharanpur and Delhi (Quazi Haaz) have been allowed to deal with foreign traffic and the working hours at Connaught Place, New Delhi, have also been extended. To prevent overcrowding at passenger booking windows, arrangements were made to open booking offices at road side stations at least one hour before the arrival of each train instead of one half of an hour as heretofore. Special booking windows were opened at Delhi for the convenience of passengers travelling by all classes for out-of-the-way places and ladies travelling in Class III.

*Madras and Southern Mahratta Railway.*—A new booking office was opened at Belgaum during the year for booking passengers only. Special booking windows were arranged at certain stations for the issue of Class III tickets to passengers travelling beyond 300 miles.

*Oudh Tirhut Railway.*—Booking offices were opened at Muzaffarpur and Patna for booking passengers only. In order to serve important markets in Kumaon hills, where the medium of transport mostly consists of motor vehicles, the out-agencies at Almora, Nainital, Ram Khet, and Bhowali remained open for goods and parcels traffic. The Nainital out-agency was transferred from Kumaon Motor Owners Union Ltd. to the U. P. Government Roadways.

*South Indian Railway.*—Five new out-agencies were opened during the year. The festival booking office at Madura Junction was converted into a regular booking office to relieve the congestion in the existing booking office.

**138. Waiting rooms and waiting halls.**—During the year waiting rooms and waiting halls were added and improvements effected to the existing station accommodation for passengers at a number of stations.

*Bengal and Assam Railway.*—The new accommodation for Class III lady passengers at Baidyathdham, and the new waiting hall at Jangbhabra, Haridaspur, under construction, will shortly be available for the use of passengers.



*East Indian Railway.*—One Class III waiting room was provided at Bhuban Road. Improvements were effected in waiting rooms and waiting halls at Allahabad, Mirzapur, Bindhachal, Calcutta (Main Station), Faizabad and Gaya.

*Great Indian Peninsula Railway.* The Class I waiting room was reopened at Majhgawan on 1 April 1945. At Dadar, mosaic flooring was provided in the ladies waiting room. In the Class III waiting hall at Poona, arrangements for bathing and washing were improved.

*Madras and Southern Mahratta Railway.* A new Class III waiting hall for ladies was provided during the year at Nuzvid. Twenty four additional waiting rooms were provided at six stations on the broad gauge and one on the metre gauge.

*Oudh Tirhut Railway.*—Separate waiting rooms for Class II ladies and gents were opened at Bahraich and Mankapur during 1945-6.

*South Indian Railway.* At Coonoor, flush out arrangements, extra water closet, ladies dressing room and a commodious ladies waiting room were provided in the waiting rooms for Class I and Class II passengers. Improvements were also carried out in the ladies and gents retiring and waiting rooms at Tirupattur, Polur, Villupuram, Ootacamund, Salem Junction and Egmore (Madras).

**139. Additional platforms and sheds.** A number of works on improvements to, or extension of, existing platforms, and provision of additional facilities were either completed or commenced during the year. They are briefly referred to in the following paragraphs.

On the Bombay, Baroda and Central India Railway, work was taken in hand on extension of platforms at Surat, Broach, Bulsar, Anklesvar, Navsari, Virar, Kharsalia, Dohad, Shamgarh, Gangapur City, Bharatpur, Kotah, Lakheri, Bayana, Sawai Madhopur, Shri Chhatrapur and Bijaipur stations. Extension of waiting sheds was also taken up at Shri Mahabirji, Bayana, and Bhawani Mandi stations on the same railway.

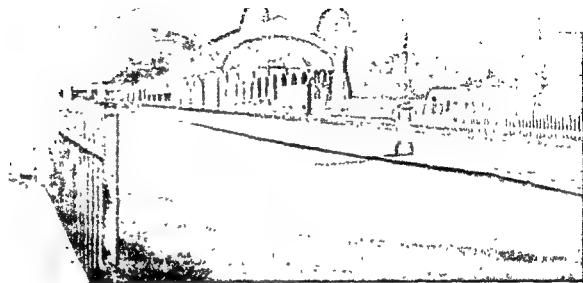
On the East Indian Railway, a second rail level platform was provided at Goshanganj. The Up and Down platforms were raised to high level at Khusrupur, and passenger platforms were lengthened at Mirzapur, Bindhachal, Firozabad, Naini and Bindki Road. At Bhadohi Habibwala, Fazalpur and Chandok, rail level platforms were provided. Raised platforms were provided at Japla, Garhwa Road, Sayed Raja, Kudra and Khusrupur.

On the Great Indian Peninsula Railway, covered platforms above rail level were provided at Sirhi Itara, Kathara, Sambhua, Pathara, Ghatampur, Hamirpur Road, Yamuna South Bank, Vithalvadi, Pagara, and Paricha stations. Side coverings for platforms were provided at King's Circle, and platforms Nos. 3 and 4 at Kalyan were topped with cement concrete.

The level of the platforms at six stations on the broad gauge section of the South Indian Railway was raised to 1'-6" above rail level. On the metre gauge, the platforms at Valadi and Uttamarkovil (train halt) were widened, and the platform at Tirumayiladi (train halt) was extended. Platforms at stations in the Madras Suburban area, Villupuram, Madura, Mettupalayam and Ootacamund were provided with concrete floors. Shellcrete flooring was provided in the second island platform at Coimbatore Junction in place of the old gravel flooring.

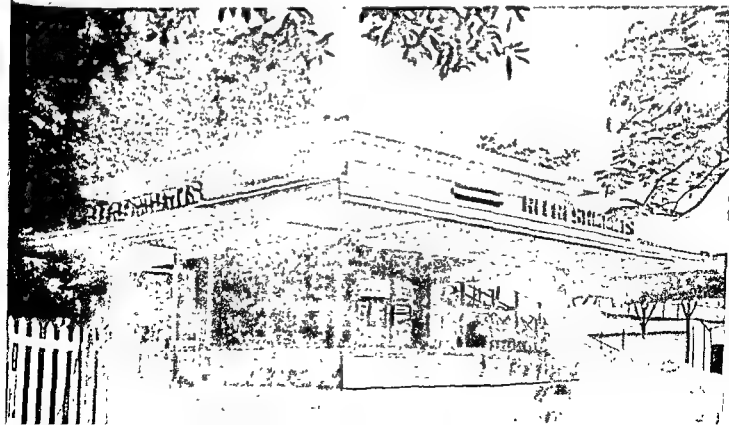
**140. Reorganization of catering arrangements.**—During the year, decision was taken to replace the former system of maintaining separate refreshment rooms on European and Indian styles, by vegetarian and non-vegetarian refreshment rooms. At major stations and junctions, it was decided to retain in addition restaurants on the Western style, suited to the requirements of overseas tourists.

Another important decision was the prohibition of the sale of alcoholic drinks on railway premises and on dining cars.



MADRAS EGMORE : STATION AS SEEN FROM OUTSIDE SHOWING THE FLUORESCENT LAMPS, OVERBRIDGE, ETC

REINFORCED CONCRETE PLATFORM REFRESHMENT STALL AT ARKONAM, M & M. RAILWAY (COST RS. 2,600)





The food situation not having shown any material improvement, austerity meals continued to be served, but a strict check was maintained over the quality of food supplied and the cleanliness of preparations.

During the year, and, more particularly, towards its close, a number of suitable contractors from among displaced persons were awarded contracts for vending and catering. All possible avenues were being explored with the object of rehabilitating as large a number as possible of these people.

**141. Supply of drinking water.**—Arrangements for providing adequate supplies of drinking water for passengers continued to receive the attention of railways during the year. A new experiment of stationing about twenty watermen at carefully selected stopping stations along all important routes to permit supply of drinking water to passengers in all compartments is being tried during the ensuing summer. If this proves a success, it should be possible to reduce the number of watermen scattered all over the line.

**142. Cleanliness of coaching stock and prevention of thefts of fittings.**—As in the previous year, the question of cleanliness of coaching stock has continued to receive the active attention of Railways during the current year. The system of Resident Conductors was extended to all the Indian Government Railways. As the result of various steps taken, an improvement in the general cleanliness of stock has been effected. There has been a steady although small, reduction in the theft of fittings from coaching stock.

**143. Steps taken to alleviate overcrowding in trains.**—Several measures were taken during the year to reduce overcrowding in trains. These included bringing new coaching stock into service, and introducing additional trains of which a certain number was exclusively devoted to Class III passengers only. Passenger train services were strengthened by attaching extra carriages where available and within the permissible hauling capacity of the engine, and generally striving to attain the best possible utilization of all available coaching stock. In addition, the drive against ticketless travel was intensified. Social guides appointed to assist Class III passengers also helped towards reducing overcrowding by directing passengers from the more congested carriages to the less congested.

# CHAPTER IX

## ACCIDENTS

**144. Major accidents.**--The details of five major accidents, which occurred during the year, are referred to here.

On 30 April 1948, while No. 171 Up Goods was running between Sultan-gunge and Gangania stations on the Sahibganj Loop of the East Indian Railway No. 314 Down Workmen's train also entered the same block section from the opposite direction and collided head on with it. The two leading coaches on 314 Down were smashed and the engines of both the trains suffered considerable damage. Eight persons were killed and 17 injured. The approximate cost of damage to rolling stock was Rs. 60,000.

On 15 May 1948, No. 9 Up Dehra Dun Express, running between Chhota Ambona and Pradhankanta stations on the Grand Chord section of the East Indian Railway, was derailed. The engine and four leading coaches capsized and the fifth and the sixth coaches were also derailed. Thirty-three persons were killed and 96 injured. The approximate cost of damage to rolling-stock was Rs. 53,800. The accident was caused by the track having been tampered with by some unknown persons.

On 14 September 1948, No. 8 Down Nainital Express was running between Purnapur and Shahgarh stations on the Lucknow-Bareilly section of the Oudh Tirhut Railway, and No. 49 Up Passenger also entered the same block section from the opposite direction and collided head-on with it. The engines of both the trains were badly damaged. The three leading coaches on 8 Down and two leading coaches on 49 Up were derailed and damaged. Twenty-six persons were killed and 35 injured. The approximate cost of damage to rolling-stock and permanent way was Rs. 87,300.

On 15 November 1948, while No. 7 Up Passenger was running between Furkating and Kamarbandha Ali stations on the Lumding-Mariani (Main Line) section of the Assam Railway, its engine and four leading coaches were derailed. The engine capsized and the first, third and the fourth coaches were wrecked. Seventeen persons were killed and 40 injured. The approximate cost of damage to rolling-stock and permanent way was Rs. 52,000.

On 13 March 1949 a Down light engine was running between Pipraich and Bodarwar stations on the Savan-Gorakhpur Loop of the Oudh Tirhut Railway, and No. 63 Up Passenger also entered the same block section from the opposite direction and collided head-on with it. The front portions of both the engines were damaged and the two leading coaches of 63 Up derailed and damaged. Nine persons were killed and 44 injured. The approximate cost of damage to rolling-stock and permanent way was Rs. 41,000.

**145. Review of Accident Statistics.**--The number of passengers, railway servants and other persons killed and injured in accidents on Indian Railways exclusive of casualties in railway workshops during 1948-9 as compared with the previous year may be seen from the accompanying table.

**NUMBER OF PERSONS INJURED IN ACCIDENTS ON INDIAN RAILWAYS DURING  
1917-8 AND 1918-9**

Classification	Killed		Injured	
	1917-8*	1918-9*	1917-8*	1918-9*
<b>A. Passengers</b>				
(a) In accidents to trains, rolling stock, permanent way, etc.	273	211	763	363
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents.	107	621	2,979	3,113
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned.	2	1	27	14
Total	382	833	3,769	3,490
<b>B. Railway servants</b>				
(a) In accidents to trains, rolling stock, permanent way, etc.	21	27	195	232
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents.	171	212	6,278	5,153
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned.	21	25	13,602	15,008
Total	213	264	20,075	20,393
<b>C. Other than passengers and railway servants</b>				
(a) In accidents to trains, rolling stock, permanent way, etc.	33	102	111	161
(b) In accidents caused by movement of trains and railway vehicles exclusive of train accidents.	2,054	3,553	14,471	1,677
(c) In accidents on railway premises in which the movement of trains, vehicles, etc., was not concerned.	15	28	93	54
Total	2,102	3,683	14,675	1,892
<b>GRAND TOTAL</b>	<b>4,133</b>	<b>4,660</b>	<b>27,507</b>	<b>26,205</b>

\* See 'Notes' at the end of this Chapter

Of the total of 4,660 persons killed 3,653 or 79 per cent were other than passengers and railway servants and, of this number, 2,970 were trespassers and 367 were reported to be suicides. Furthermore, 57 persons were killed on railway premises otherwise than during the movement of trains, vehicles, etc.

As compared with the previous year, the number of passengers injured in accidents caused by movement of trains and railway vehicles exclusive of train accidents increased by 131 due mainly to an increase in the number of passengers falling or jumping out of carriages during the running of trains. The number of railway servants injured in accidents to trains, rolling-stock and permanent way, etc., and killed in accidents caused by movement of trains and railway vehicles exclusive of train accidents increased as compared with the previous year by 57 and 41 respectively. These increases are made up of slight increases under different classes of accidents. The number of persons other than passengers and railway servants killed and injured in accidents caused by movement of trains and railway vehicles other than train accidents increased by 595 and 214 respectively, on account of an increase in the number trespassing on the line.

The following statement shows the number of passengers killed and injured in train accidents only, *i.e.*, collisions, derailments, etc., during the last five years as compared with the number carried.

#### NUMBER OF PASSENGERS KILLED AND INJURED IN TRAIN ACCIDENTS, 1944-5 to 1948-9

Year	Number of passengers carried (in millions)†	Killed		Injured	
		Number‡	Per million passengers carried	Number‡	Per million passengers carried
1944-5 . . . . .	971	34	0·04	132	0·14
1945-6 . . . . .	1,093	80	0·08	253	0·23
1946-7 . . . . .	1,139	93	0·08	340	0·29
1947-8* . . . . .	1,044	298	0·29	721	0·69
1948-9* . . . . .	1,180	55	0·05	269	0·22

\* See 'Note' at the end of this Chapter.

† Represents total number carried on all railway.

‡ Excludes tram wrecking and attempted tram wrecking.

On Class I Railways, the number of railway servants killed and injured in accidents from the movement of trains, railway vehicles, etc., exclusive of train accidents, increased by 44 and 2,287 respectively. The main causes for these accidents are analysed in the following table.

#### CLASSIFICATION OF ACCIDENTS TO RAILWAY SERVANTS

Cause	Killed		Injured	
	1947-8	1948-9	1947-8	1948-9
(1) Misadventure or accidental . . . .	148	176	5,924	5,093
(2) Want of caution or misconduct on the part of the injured person.	14	29	218	332
(3) Want of caution or breach of rules, etc., on the part of servants other than the persons injured.	1	2	45	75
(4) Defective apparatus, appliance, etc., or want of sufficient appliances, safeguards, etc.	..	..	..	4
TOTAL . . . . .	163	207	6,217	5,504

In the following statement are analysed the accidents which occurred during the last two years grouped under certain principal heads. A statement showing the accidents in greater detail for each railway will be found in Appendix D of Volume II of this Report.

#### ACCIDENTS DURING 1947-8 AND 1948-9 CLASSIFIED UNDER PRINCIPAL HEADS

	1947-8*	1948-9*
(1) Derailments not involving passenger trains . . . . .	7,959	8,177
(2) Accidents due to failure of engines owing to faulty material, workmanship and operation arising from the working of the running staff . . . . .	3,314	4,672
(3) Running over cattle . . . . .	4,292	4,509
(4) Accidents due to failure of couplings and drawgear . . . . .	2,122	2,296
(5) Accidents due to failure of engines owing to faulty material and workmanship in the Mechanical Department . . . . .	2,056	1,646
(6) Fires in trains at stations or bridges . . . . .	374	529

ACCIDENTS DURING 1917-8 AND 1918-9 CLASSIFIED UNDER PRINCIPAL HEADS  
—contd.

	1917-8*	1918-9*
(7) Accidents due to other rolling stock failures . . . . .	206	322
(8) Derailments of passenger trains . . . . .	204	233
(9) Collision involving goods trains or goods vehicles . . . . .	122	253
(10) Accidents due to failure of axles . . . . .	207	222
(11) Attempted train wrecking . . . . .	161	169
(12) Broken rails . . . . .	101	162
(13) Running over obstacles (other than those included under 'Train wrecking', 'Attempted train wrecking' and 'Trains running into road traffic at level crossings') . . . . .	104	133
(14) Trains running into road traffic at level crossings . . . . .	172	185
(15) Landslips . . . . .	82	128
(16) Train wrecking . . . . .	42	31
(17) Flooding of permanent way . . . . .	49	110
(18) Accidents due to failure of tires and wheels . . . . .	62	88
(19) Passenger trains running in the wrong direction through points but not derailed . . . . .	13	72
(20) Collisions between light engines . . . . .	73	53
(21) Accidents due to failure of brake apparatus . . . . .	45	51
(22) Collisions involving passenger trains . . . . .	49	31
(23) Failure of buffers, bumpers, etc. . . . .	4	...
(24) Miscellaneous . . . . .	412	333
TOTAL . . . . .	22,617	21,615

\* See 'Note' at the end of the Chapter

The total number of accidents shows an increase of 2,011 or 8.2 per cent as compared with the previous year, against an increase in the total train miles of 6.4 per cent.

Derailments not involving passenger trains still account for the largest number of accidents, i.e., 33.3 per cent of the total. The others in inverse order of importance are stated below:—

	Per cent
Accidents due to failure of engines owing to faulty material, workmanship and neglect or arising from the working of the running gear . . . . .	10
Running over cattle . . . . .	14
Accidents due to failure of couplings and drawgear . . . . .	9
Accidents due to failure of engines owing to faulty material and workmanship in the Mechanical Department . . . . .	7
Fires in trains at stations or bridges . . . . .	2
Accidents due to other rolling stock failures . . . . .	1
Derailments of passenger trains . . . . .	1
Collision involving goods trains or goods vehicles . . . . .	1
Accidents due to failure of axles . . . . .	1

Accidents in railway workshops accounted for the death of 9 and injuries to 17,331 railway servants, or a decrease of 7 in the former and an increase of 2,714 in the latter as compared with the previous year.

Note.—Figures for 1916-7 and 1917-8 are inclusive of the Bengal Asam and North Western Railways. Figures for 1917-8 are exclusive of the Bengal Asam and North Western Railways but inclusive of Eastern Punjab and Asam Railways for the period 15 August 1917 to 31 March 1918 only, while those for 1918-9 are inclusive of Eastern Punjab and Asam Railways for the whole year.





## APPENDIX A

**Resolution regarding the separation of Railway from General Finances,**  
adopted by the Legislative Assembly on 20 September 1924 and  
the Convention Resolution of 1913.

\* This Assembly recommends to the Governor General in Council that in order to relieve the general budget from the violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry out a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State on Railways.

- (1) The railway finances shall be separated from the general finances of the country and the general revenues shall receive a definite annual contribution from railways which shall be the first charge on the net receipts of railways.
- (2) The contribution shall be based on the capital at charge and working results of commercial lines, and shall be a sum equal to one per cent on the capital at charge of commercial lines (excluding capital contributed by companies and Indian States) at the end of the penultimate financial year plus one-fifth of any surplus profits remaining after payment of this fixed return, subject to the condition that, if in any year railway revenues are insufficient to provide the percentage of one per cent on the capital at charge surplus profits in the next or subsequent years will not be deemed to have accrued for purposes of division until such deficiency has been made good.

The interest on the capital at charge off, and the loss in working, strategic lines shall be borne by general revenues and shall consequently be deducted from the contribution so calculated in order to arrive at the net amount payable from railway to general revenues each year.

- (3) Any surplus remaining after this payment to general revenues shall be transferred to a railway reserve, provided that if the amount available for transfer to the railway reserve exceeds in any year three crores of rupees only two-thirds of the excess over three crores shall be transferred to the railway reserve and the remaining one-third shall accrue to general revenues.
  - (4) The railway reserve shall be used to secure the payment of the annual contribution to general revenues; to provide, if necessary, for arrears of depreciation and for writing down and writing off capital; and to strengthen the financial position of railways in order that the services rendered to the public may be improved and rates may be reduced.
  - (5) The railway administration shall be entitled, subject to such conditions as may be prescribed by the Government of India, to borrow temporarily from the capital or from the reserves for the purpose of meeting expenditure for which there is no provision or insufficient provision in the revenue budget subject to the obligation to make repayment of such borrowings out of the revenue budgets of subsequent years.
  - (6) A Standing Finance Committee for Railways shall be constituted consisting of one nominated official member of the Legislative Assembly who should be chairman and eleven members elected by the Legislative Assembly from their body. The members of the Standing Finance Committee for Railways shall be ex-officio members of the Central Advisory Council, which shall consist, in addition, of not more than one further nominated official member, six non-official members selected from a panel of eight elected by the Council of State from their body and six non-official members selected from a panel of eight elected by the Legislative Assembly from their body.
- The Railway Department shall place the estimate of railway expenditure for Railways on some date prior to and for grants for railways and shall, in its annual expenditure programme, show the expenditure under a depreciation fund created as per the new rules in charge to capital and revenue.

- (7) The railway budget shall be presented to the Legislative Assembly if possible in advance of the general budget and separate days shall be allotted for its discussion, and the Member in charge of Railways shall then make a general statement on railway accounts and working. The expenditure proposed in the railway budget, including expenditure from the depreciation fund and the railway reserve, shall be placed before the Legislative Assembly in the form of demands for grants. The form the budget shall take after

separation, the detail it shall give and the number of demands for grants into which the total vote shall be divided shall be considered by the Railway Board in consultation with the proposed Standing Finance Committee for Railways with a view to the introduction of improvements in time for the next budget, if possible.

- (8) These arrangements shall be subjected to periodic revision but shall be provisionally tried for at least three years.
- (9) In view of the fact that the Assembly adheres to the resolution passed in February 1923, in favour of State management of Indian Railways, these arrangements shall hold good only so long as the East Indian Railway and the Great Indian Peninsula Railway and existing State-managed railways remain under State management. But if in spite of the Assembly's resolution above referred to Government should enter on any negotiations for the transfer of any of the above railways to Company management such negotiations shall not be concluded until facilities have been given for a discussion of the whole matter in the Assembly. If any contract for the transfer of any of the above railway to Company management is concluded against the advice of the Assembly, the Assembly will be at liberty to terminate the arrangements in this Resolution.

Apart from the above convention this Assembly further recommends

- (i) that the railway services should be rapidly Indianized, and further that Indians should be appointed as Members of the Railway Board as early as possible, and
- (ii) that the purchases of stores for the State Railways should be undertaken through the organization of the Stores Purchase Department of the Government of India.

### Convention Resolution of 1943.

The Legislative Assembly on 2 March 1943 passed the following resolution:—

Whereas it has been found that the Convention, which was adopted under the Assembly Resolution, dated 20th September 1924, and which was intended to relieve the General Budget from violent fluctuations caused by the incorporation therein of the railway estimates and to enable railways to carry on a continuous railway policy based on the necessity of making a definite return to general revenues on the money expended by the State, has not achieved these objects, this Assembly recommends to the Governor General in Council, that:

- (i) for the year 1942-3, a sum of Rs. 2,35,32 thousand shall be paid to general revenues over and above the current and arrear contribution due under the Convention,
- (ii) from the 1st April 1943, so much of the Convention as provides for the contribution and allocation of surpluses to general revenues shall cease to be in force,
- (iii) for the year 1943-4, the surplus on commercial lines shall be utilized to repay any outstanding loan from the depreciation fund and thereafter be divided 25 per cent to the railway reserve and 75 per cent to general revenues, the loss, if any, on strategic lines being recovered from General Revenues, and
- (iv) for subsequent years and until a new convention is adopted by the Assembly, the allocation of the surplus on commercial lines between the railway reserve and general revenues shall be decided each year on consideration of the needs of the railways and general revenues, the loss, if any, on strategic lines being recovered from general revenues.

## APPENDIX B

### MINISTRY OF RAILWAYS

Officers of the Ministry of Railways (Railway Board) and  
attached offices on 31 March 1949

The Hon'ble Shri N. Gopalaswami Ayyangar, Minister for Transport and Railways  
The Hon'ble Shri K. Santhanam, Minister of State for Transport and Railways

#### Railway Board

Shri K. C. Reddy . . . . .	Chief Commissioner of Railways
Shri P. M. Joseph . . . . .	General Commissioner of Railways.
Shri H. J. Nicholas, D.Sc. (Hon'ble) . . . . .	Member Engineering
Shri P. C. Halderwar . . . . .	Member Staff
Shri V. P. Bhaskar . . . . .	Member Transportation
Shri K. P. Muthran . . . . .	Director Establishment
Shri A. A. Brown . . . . .	Director Traffic.
Shri P. P. Kanna . . . . .	Director Civil Engineering
Shri P. Meera . . . . .	Director Mechanical Engineering
Shri C. T. Venkayyal . . . . .	Director Finance (Budget)
Shri K. Subramanyam . . . . .	Director Finance (Expenditure)
Shri S. S. Basavaraj . . . . .	Secretary.
Shri G. Rama Rao . . . . .	Deputy Secretary
Shri N. L. Das Gupta . . . . .	Assistant Secretary
Shri M. E. Hartley . . . . .	Joint Director Establishment (Temporary)
Shri D. C. Bajaj . . . . .	Joint Director, Civil Engineering (Temporary)
Shri G. K. Kar . . . . .	Joint Director Public Relations (Temporary).
Shri S. K. Gupta . . . . .	Joint Director, Traffic (General) (Temporary)
Shri M. A. B. Sengupta . . . . .	Joint Director Finance (Temporary)
Shri Y. P. Kulkarni . . . . .	Joint Director Adjudication (Temporary)
Shri K. L. Das . . . . .	Deputy Director Finance (Budget)
Shri K. S. Bhattacharya . . . . .	Deputy Director Finance (Establishment)
Shri P. Bhattacharya . . . . .	Deputy Director, Mechanical I
Shri T. Venkatasubramanian Ayyar . . . . .	Deputy Director Civil Engineering (Temporary)
Shri L. S. Mathur . . . . .	Deputy Director Telecommunications (Temporary)
Shri M. K. Krishnaswami . . . . .	Deputy Director, Statistics (Temporary)
Shri P. Chakrabarty . . . . .	Deputy Director, Mechanical, II (Temporary)
Shri Rajendra Prasad . . . . .	Deputy Director, Traffic (Transportation) (Temporary).
Shri B. B. Naidu . . . . .	Deputy Director, Public Relations
Shri P. C. Kapur . . . . .	Deputy Director, Mechanical III (Temporary)
Shri P. K. Madhava Menon . . . . .	Deputy Director Establishment
Shri K. S. Anantapadmanabhan . . . . .	Deputy Director Finance (Expenditure) (Temporary).
Shri Surjan Singh . . . . .	Assistant Director, Traffic (Commercial) (Temporary).
Shri A. Haldreth . . . . .	Assistant Director, Stores (Temporary).
Shri Haveli Ram . . . . .	Assistant Director, Finance (Accounts) (Temporary)
Shri Tek Chand . . . . .	Assistant Director, Traffic (Temporary)
Shri M. K. S. Aiyar . . . . .	Assistant Director, Establishment, II (Temporary)
Shri S. L. Jaini . . . . .	Assistant Director, Establishment, I (Temporary).

**Attached Officers**

Prof. L. A. Natesan . . . . .	Economic Adviser (Temporary).
Shri P. L. Roy . . . . .	Officer on Special Duty (Railway Territorial Units) (Temporary).
Shri Ranjit Singh . . . . .	Officer on Special Duty (Tour) (Temporary).
Shri D. Sandilya . . . . .	Officer on Special Duty (Grainshops) (Temporary).
Shri B. B. Mathur . . . . .	Officer on Special Duty (Temporary).
Shri M. N. Chakravarti . . . . .	Officer on Special Duty (Temporary).

**Central Standards Office for Railways**

Shri B. S. Sindhu . . . . .	Deputy Chief Controller of Standardization (Mechanical).
Shri K. P. Antia . . . . .	Deputy Chief Controller of Standardization (Civil).
Shri A. K. Gupta . . . . .	Assistant Chief Controller of Standardization (Civil).
Shri S. R. Woodmore . . . . .	Assistant Chief Controller of Standardization (Specification and Research).
Shri T. E. St. Q. Stewart . . . . .	Assistant Chief Controller of Standardization (Designs).
Shri A. Freitas . . . . .	Assistant Chief Controller of Standardization (Loco. and Carriage).
Shri R. H. G. da Cunha da Costa . . . . .	Research Officer (Mechanical).
Shri H. H. Banerjee . . . . .	Research Officer (Civil), II.
Shri V. Venkataramayya . . . . .	Research Officer (Civil), I.
Shri V. Kamlani . . . . .	Dynamometer Car Officer.
Shri R. G. Bhatawadekar . . . . .	Research Officer (Chemical and Metallurgical).
Shri W. H. Anderson . . . . .	Inspecting Officer for Railways (Tatanagar).
Shri M. S. Murti . . . . .	Research Officer (Electrical).
Shri J. T. Whentley . . . . .	Officer on Special Duty, Madras

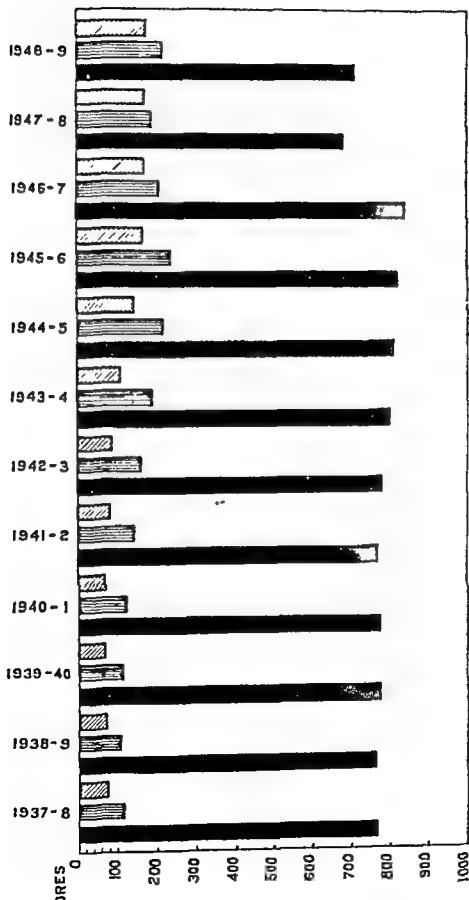
## ***GRAPHS***



# TOTAL CAPITAL AT CHARGE, TOTAL GROSS EARNINGS AND TOTAL WORKING EXPENSES OF INDIAN GOVERN- MENT RAILWAY LINES

(EXCLUDING N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47,  
AND THE PAKISTAN RYS. THEREAFTER)

 CAPITAL AT CHARGE  
 GROSS EARNINGS  
 WORKING EXPENSES



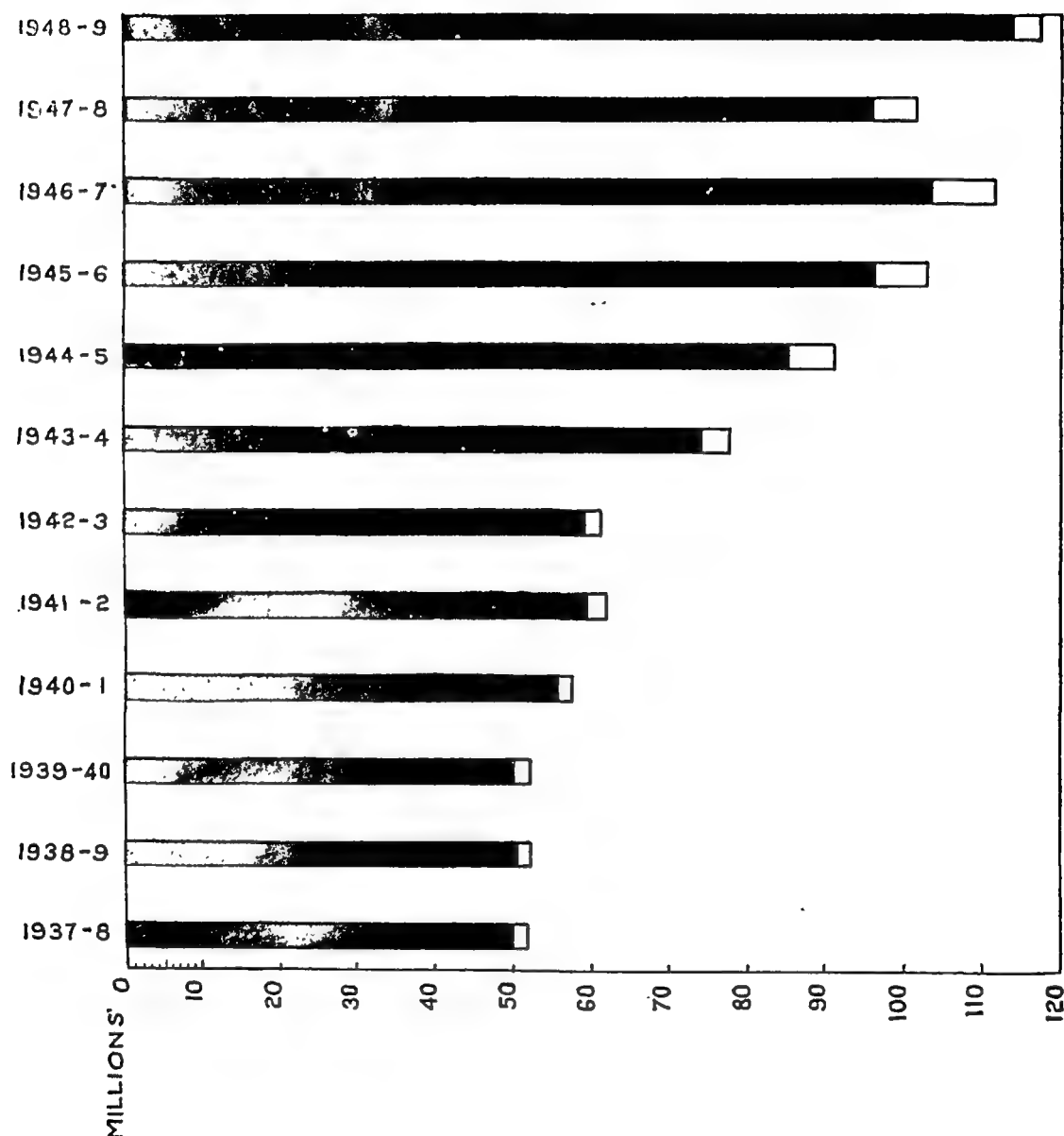


# NUMBER OF PASSENGERS CARRIED INDIAN RAILWAYS

(EXCLUDING N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47,  
AND THE PAKISTAN RYS. THEREAFTER.)

■ Third class.

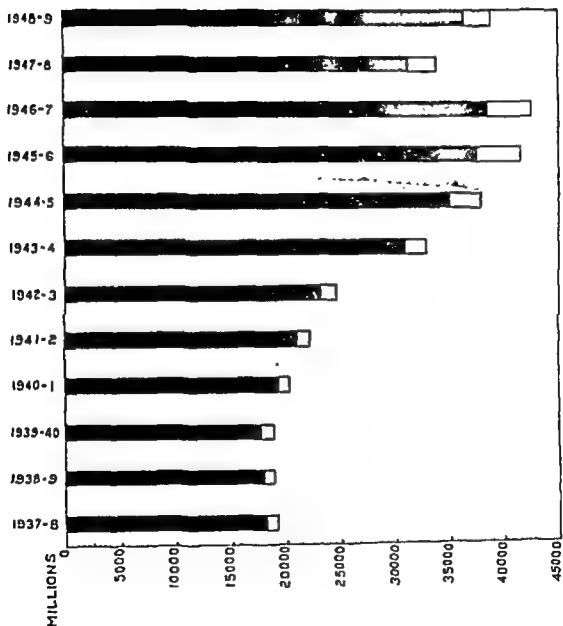
□ Upper classes.



# NUMBER OF PASSENGER MILES INDIAN RAILWAYS

(EXCLUDING N. W. & B. A. RYS DURING 1-4-47 TO 14-8-47,  
AND THE PAKISTAN RYS THEREAFTER)

■ Third class.  
□ Upper classes

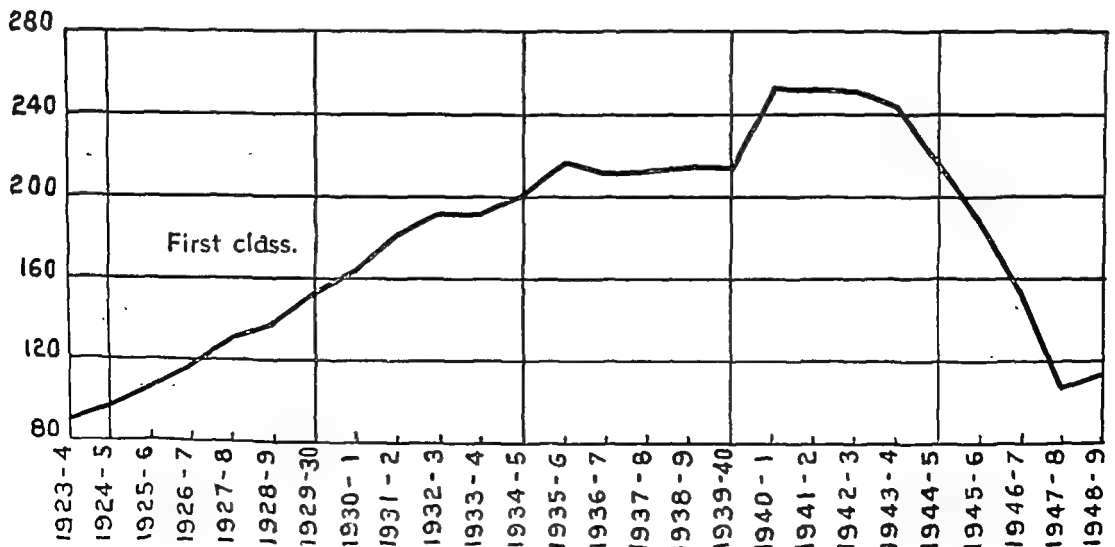
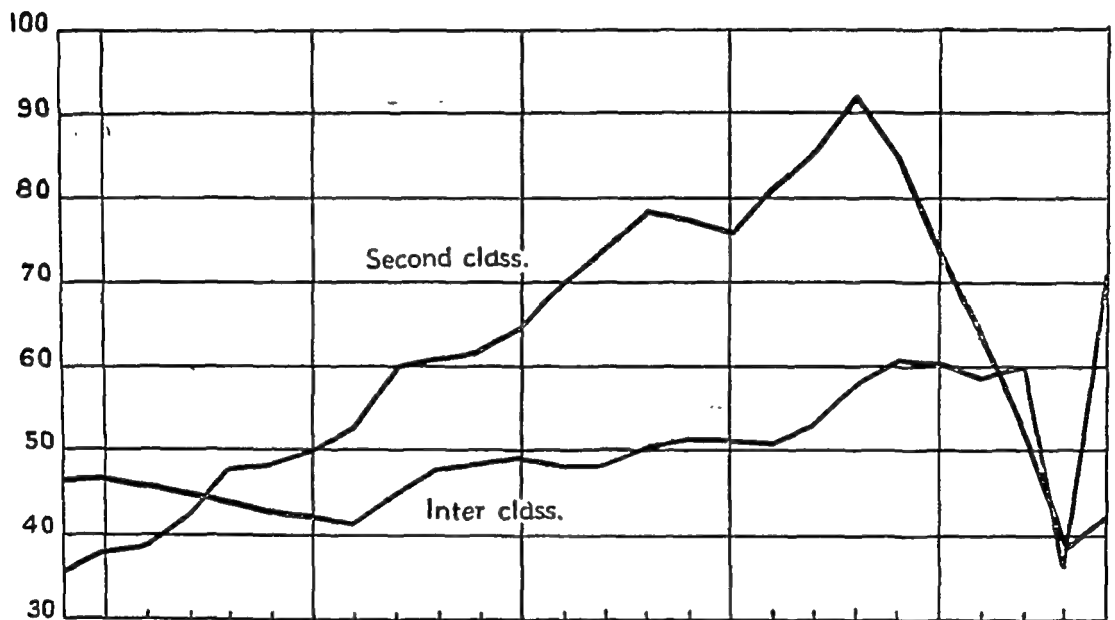
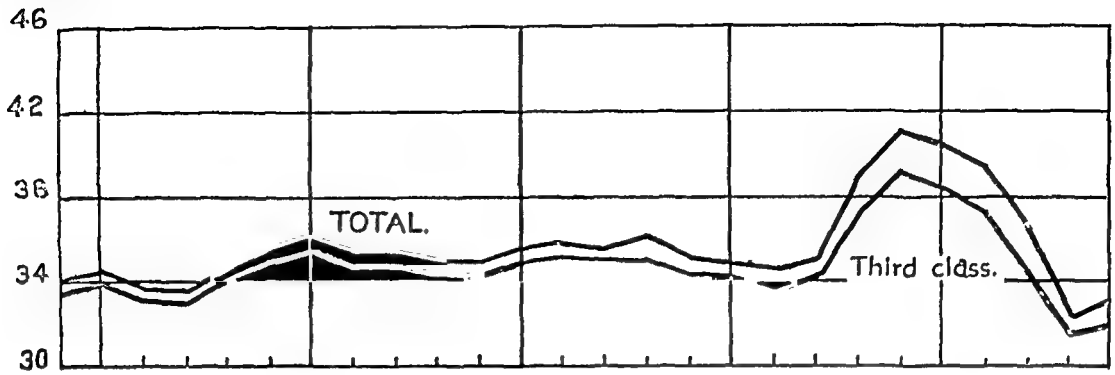


# AVERAGE MILES A PASSENGER WAS CARRIED

## ALL INDIAN RAILWAYS

(EXCLUDING BURMA RAILWAYS DURING 1923-4 TO 1936-7, N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS. THEREAFTER.)

MILES



NOTE:—

The figures by classes for 9 months up to December 1948 according to the old classes are combined as detailed below with the figures for 1-1-49 as noted below.

First class with air conditioned  
Second class with Class I.

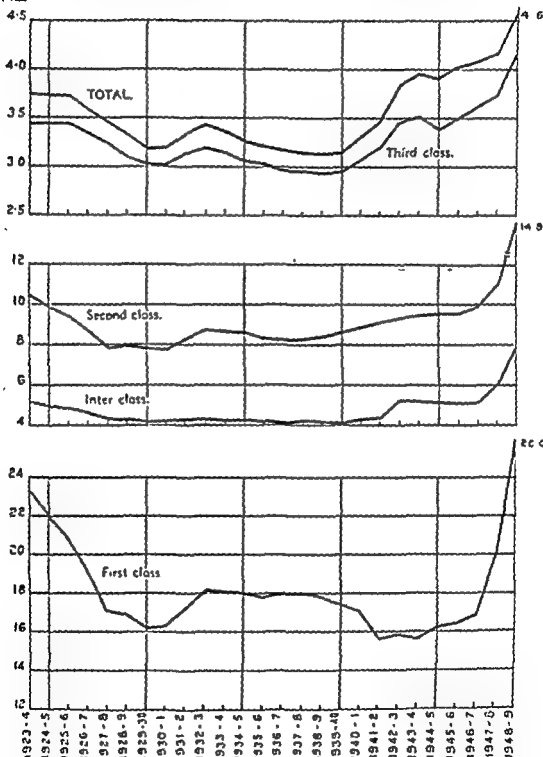
Inter class with Class II.  
Third class with Class III.

# AVERAGE RATE CHARGED PER PASSENGER PER MILE

## ALL INDIAN RAILWAYS

(EXCLUDING BURMA RAILWAYS DURING 1923-4 TO 1936-7, N. W. & B. A. RYS DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS THEREAFTER)

PIES



NOTE:—

The figures by classes for 9 months up to December 1948 according to the old classes are combined as detailed below with the figures for 1-1-49 as noted below

First class with air conditioned

Second class with Class I

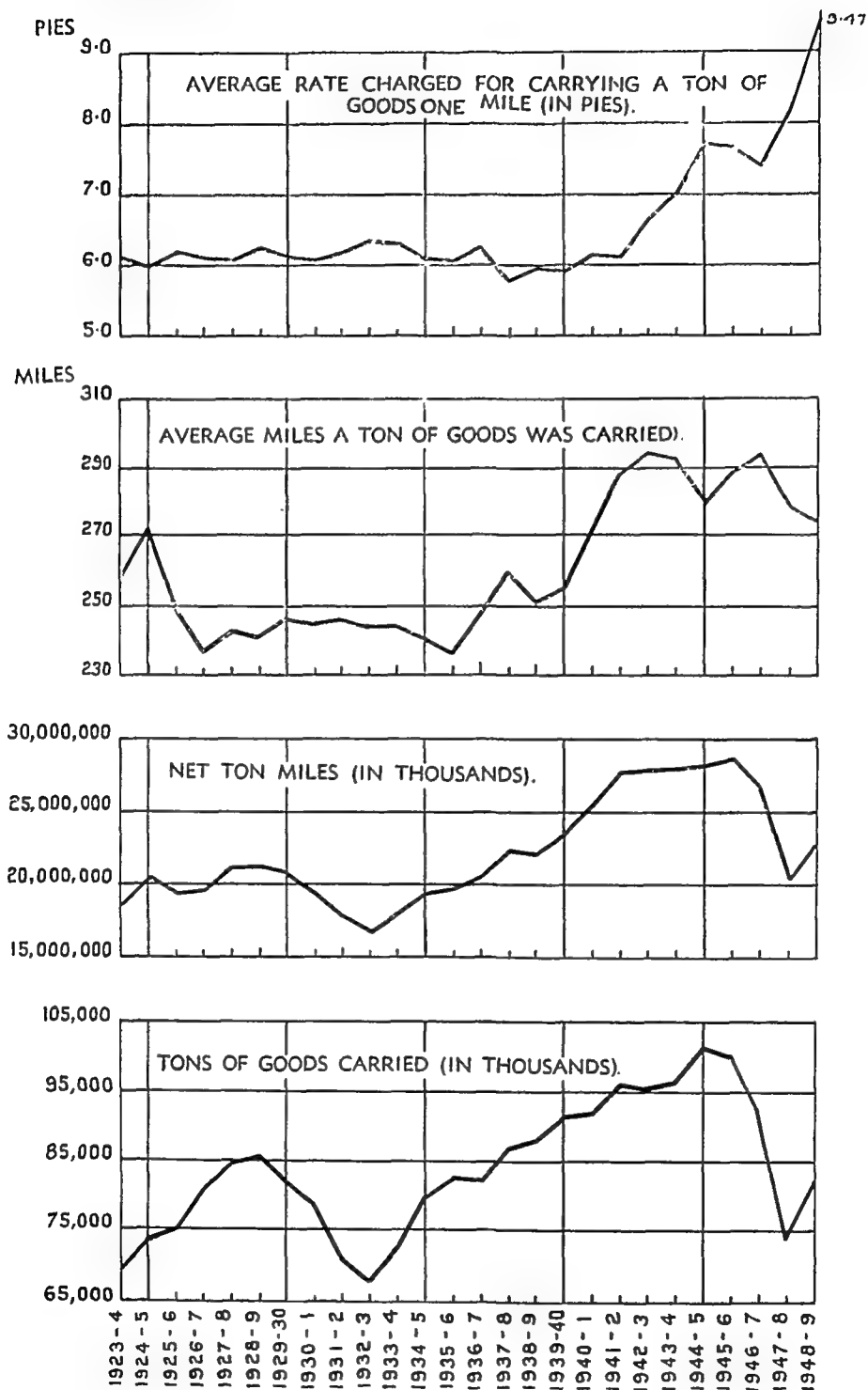
Inter class with Class II

Third class with Class III

# AVERAGE RATE, AVERAGE LEAD, NET TON MILES, TONS CARRIED

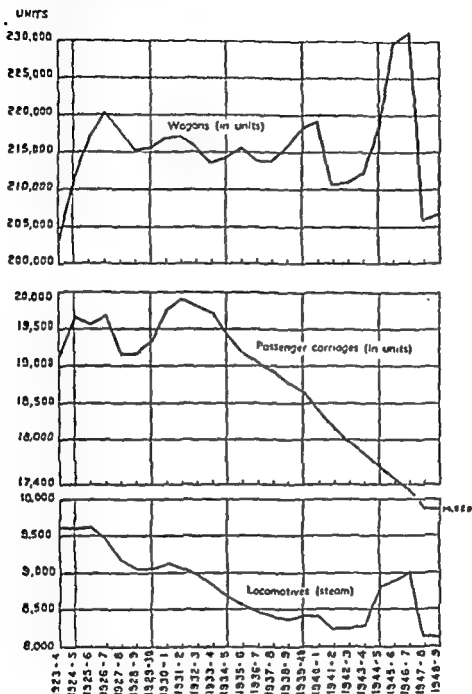
## ALL INDIAN RAILWAYS

(EXCLUDING BURMA RAILWAYS DURING 1923-4 TO 1936-7, N. W. & B. A. RYS. DURING 1-4-47 TO 14-8-47, AND THE PAKISTAN RYS. THEREAFTER.)



# ROLLING-STOCK IN SERVICE INDIAN RAILWAYS

(EXCLUDING BURMA RAILWAYS DURING 1923-4 TO 1936-7, N. W. G. & A. RYS. DURING 1-1-47 TO 14-8-47, AND THE PAKISTAN RYS. THEREAFTER)





# APPENDIX D.

Railway Administrations in India alphabetically arranged by Classes according to their gross earnings showing the working agencies, ownership, and route mileage open on 31 March 1940\*.

Indian Railway systems have been classified under three Classes for statistical purposes—

Class I Railways with gross earnings of Rs. 50 lakhs and over a year

Class II Railways with gross earnings of less than Rs. 50 lakhs a year, but exceeding Rs. 10 lakhs a year

Class III Railways with gross earnings of Rs. 10 lakhs and under a year

Railway system		Lines comprised in the system			Owned by
Name 1	Working for 2	Name 3	Gauge 4	Route mileage 5	6
Class I Railways					
1 Assam	Indian Govt.	(a) Assam . . . . .	3-3½"	1,131	Indian Government
		(b) Chapermukh Sadihat . . . . .	3-3½"	31	Branch Line Company under guarantee terms.
		(c) Katakhal Lalabazar . . . . .	3-3½"	24	Iditto.
		(d) Cooch Behar State . . . . .	3-3½"	33	Indian State
2 Bengal Nagpur	Indian Govt.	(a) Bengal Nagpur . . . . .	3-6"	2,463	Indian Government
		(b) Mayurhat . . . . .	2-6"	71	Branch Line Company under guarantee terms
		(c) Parlatimedi Light . . . . .	2-6"	56	Private body
		(d) Purulia Ranchi . . . . .	2-6"	117	Indian Government
		(e) Raipur Dhamtari . . . . .	2-6"	53	Iditto.
		(f) Raipura . . . . .	2-6"	624	Iditto.
3 Bikaner State	Indian State	(a) Bikaner State . . . . .	3-3½"	676	Indian State
		(b) Nalla Bottom of the Saltpara Bikaner Line . . . . .	3-3½"	7	Iditto.
4 Bombay, Baroda & Central India	Indian Govt.	(a) Bombay, Baroda & Central India . . . . .	3-6"	1,191	Indian Government
		(b) Nagla Lajm . . . . .	3-6"	33	Indian State
		(c) Garkhwar's Petlad Cambray (Anant Tarapur Section) . . . . .	3-6"	21	Iditto.
		(d) Garkhwar's Petlad Cambray (Tarapur Cambray Section) . . . . .	3-6"	12	Iditto.
		(e) Bombay, Baroda & Central India . . . . .	3-3½"	1,945	Indian Government
		(f) Palanpur State . . . . .	3-3½"	17	Indian State
		(g) Champner Bhivrajpur Panch Light . . . . .	2-6"	31	Indian Government.
		(h) Godhra Lunawada . . . . .	2-6"	26	Iditto.
		(i) Nalla Kapa Iron . . . . .	2-6"	24	Iditto.
		(j) Rajpura State . . . . .	2-6"	59	Indian State
		(k) Piprol Devgad Baria . . . . .	2-6"	10	Iditto.

\* No reclassification of Railways has been made after 1912 though earnings in many cases have exceeded the limits of gross earnings laid down for Class II or Class III railways

† This line is guaranteed by the Government of India and also receives a subsidy from the Assam Government



Railway system		Lines comprised in the system			Owned by
Name 1	Worked by 2	Name 3	Gauge 4	Route mileage 5	
5. East Indian	Indian Govt.	<i>Class I Railway—contd.</i>			
		(a) East Indian . . .	5'-0"	4,367	Indian Government.
		(b) Kanpur-Barabanki & others	3'-3 $\frac{3}{4}$ "	6	Ditto.
6. Eastern Punjab.	Indian Govt.	(c) Santipur-Nabadwip . .	2'-0"	17	Ditto.
		(a) Eastern Punjab . . .	5'-0"	1,483	Ditto.
		(b) Ludhiana-Dhuri-Jakhal	5'-6"	79	Indian State.
		(c) Rajpura-Bhatinda . .	5'-0"	108	Ditto.
		(d) Jind-Panipat . . .	5'-0"	20	Ditto.
		(e) Sirhind Rupar . . .	5'-0"	31	Ditto.
		(f) Rupar-Talaura* . . .	5'-0"	34	Indian Government.
		(g) Kalka-Simla . . .	2'-0"	60	Ditto.
7. Great Indian Peninsula.	Indian Govt.	(h) Kangra Valley† . . .	2'-0"	68	Ditto.
		(a) Great Indian Peninsula	5'-6"	3,085	Ditto.
		(b) Bhopal-Itarsi . . .	5'-0"	57	Jointly owned by Indian Government & Indian State.
		(c) Bhopal-Ujjain . . .	5'-0"	115	Indian State.
		(d) Bina-Baran . . .	5'-6"	147	Ditto.
		(e) Dhond-Baramati . . .	2'-0"	27	Indian Government.
		(f) Ellichpur-Yetmal . . .	2'-0"	118	Branch Line Company under rebate terms.
		(g) Pachora-Jamner‡ . . .	2'-0"	35	Ditto.
		(h) Pulgaon-Arvi . . .	2'-0"	22	Ditto.
		(i) Matheran (Hill) Light .	2'-0"	13	Indian Government.
8. Jodhpur .	Indian State.	Jodhpur . . .	3'-3 $\frac{3}{4}$ "	807	Indian State.
9. Madras & Southern Mahratta.	Indian Govt.	(a) Madras and Southern Mahratta	5'-0"	1,091	Indian Government.
		(b) Kolar Gold field (M. S. Railway)	5'-0"	10	Indian State.
		(c) Tenali-Repalle . . .	5'-0"	21	District Board.
		(d) Madras and Southern Mahratta	3'-3 $\frac{3}{4}$ "	1,712	Indian Government.
		(e) Alnavar-Dandeli (Provincial)	3'-3 $\frac{3}{4}$ "	19	Ditto.
		(f) Kolhapur State . . .	3'-3 $\frac{3}{4}$ "	29	Indian State.
		(g) Sangli State . . .	3'-3 $\frac{3}{4}$ "	5	Ditto.
		(h) West of India Portuguese	3'-3 $\frac{3}{4}$ "	51	Foreign Country.
10. Mysore State.	Indian State	(a) Mysore State . . .	3'-3 $\frac{3}{4}$ "	609	Indian State.
		(b) Bangalore-Chik Ballapur Light	2'-0"	39	Ditto.
		(c) Kolar District§ . . .	2'-0"	64	Ditto.

\* Jointly owned by the Government of India and Provincial Government (opened for passenger traffic on 9-10-1948.).

† Guaranteed by Provincial Government.

‡ Since purchased by the Government of India on 1 April 1949.

§ Jointly owned by the Mysore Government and Kolar District Board, and guaranteed by the Mysore Government for the District Board.

Railway system		Lines comprised in the system			Owned by
Name 1	Worked by 2	Name 3	Gauge 4	Route mileage 5	
11. Nizam's State	Indian State	<i>Class I Railways—continued</i>			
		(a) Nizam's State*	5' 6"	667	Indian State
		(b) Barwaha Extension	5' 6"	22	Indian Government
		(c) Nizam's State†	3' 3½"	671	Indian State
12. Oudh Tirhut	Indian Govt.	(d) Dronabhawan Kurnool	3' 3½"	34	Indian Government.
		(e) Oudh Tirhut‡	3' 3½"	3,644	Iditto
13. South Indian.	Indian Govt.	(f) Fugabadi (mile 33 1 2) Godagari	3' 3½"	33	Foreign Country.
		(g) South Indian	5' 6"	330	Indian Government
		(h) Shoranur Cochin	3' 6"	69	Indian State
		(i) Cochin Harbour	5' 6"	4	Unassisted Company.
		(j) South Indian	3' 3½"	1,479	Indian Government.
		(k) Nilgiri	3' 3½"	29	Iditto
		(l) Peralam Karaikal	3' 3½"	13	Foreign Country
		(m) Pondicherry	3' 3½"	8	Iditto
		(n) Tinnevely-Tiruchendur	3' 3½"	34	District Board
		(o) Travancore (Indian Govt Section)	3' 3½"	61	Indian Government
		(p) Travancore (Indian State Section) including Quilon Trivandrum Central Extension	3' 3½"	■	Jointly owned by Indian Govt. and Travancore Ruler (Indian State)
		<i>Class II Railways—</i>			
1. Barri Light.	Barri Light Ry Co.	Barri Light	2' 6"	203	Unassisted Company
2. Darjeeling- Himalaya- yan.	Indian Govt.	Darjeeling Himalayan	2' 0"	94	Indian Government.
3. Garkwar's Baroda State.	Indian State	(a) Garkwar's Baroda State	3' 3½"	309	Indian State
		(b) Garkwar's Baroda State	2' 6"	403	Iditto.
		(c) Rodell Chhota Udaipur	2' 6"	23	Iditto
4. Jalpur State.	Indian State	Jalpur State	3' 3½"	233	Iditto.
5. Saurashtra	Indian State	(a) Saurashtra	3' 3½"	1,007	Iditto
		(b) Okhamandal	2' 3½"	89	Iditto
		(c) Saurashtra Railway Tramway	2' 6"	140	Iditto.
6. Shahdara (Delhi)- Baharan- pur Light	Shahdara (Delhi) Baharanpur Light Ry Co	Shahdara (Delhi) Baharan pur Light ‡	2' 6"	93	Company subsidized by the Govt. of India

\* Includes Kasimpet-Balharshah, Kasimpalli-Kothagudem and Vikarabad-Bidar and Extension Branches.

† Comprises of Hingoli Branch, Hyderabad-Godavery Valley, Farbhani-Purli, Secunderabad-Indian Frontier, Jankampet-Bodhan and Mudkhed-Himayatnagar Branches

‡ Comprises of B & N W. Zone, R & K Zone, Madras-Thane, Tirhut and H A Zone, etc.

§ Please see footnote "o" on page 101

¶ Receives land only from Government.

Railway system		Lines comprised in the system			Owned by
Name	Worked by	Name	Gauge	Route mileage	
1	2	3	4	5	6
<i>Class III Railways.*</i>					
1. Ahmadpur Katwa	Ahmadpur - Katwa Rly. Co.	Ahmadpur-Katwa†	2'-6"	32	Branch Line Company under guarantee terms.
2. Arrah Sasaram Light.	Arrah Sasaram Light Rly. Co.	Arrah Sasaram Light	2'-6"	65	Company subsidized by District Board.
3. Bankura Damodar River.	Bankura-Damodar River Rly. Co.	Bankura Damodar River†	2'-6"	60	Branch Line Company under guarantee terms.
4. Baraset-Basirhat Light	Baraset - Basirhat Light Rly. Co.	Baraset-Basirhat Light	2'-6"	52	Company subsidized by District Board.
5. Bengal Provincial.	Bengal Provincial Rly. Co.	(a) Bengal Provincial	2'-6"	33	Unassisted Company.
		(b) Daghara-Jamulpur-ganj†	2'-6"	8	Branch Line Company under guarantee terms.
6. Bukhtiar-pur-Bihar Light.	Bukhtiarpur-Bihar Light Rly. Co.	Bukhtiarpur-Bihar Light	2'-6"	33	Company subsidized by District Board.
7. Burdwan Katwa.	Burdwan Katwa Rly. Co.	Burdwan Katwa†	2'-6"	32	Branch Line Company under guarantee terms.
8. Cutch State.	Indian State	Cutch State	2'-6"	72	Indian State.
9. Dehri-Rohtas Light.	Dehri-Rohtas Light Rly. Co.	Dehri-Rohtas Light	2'-6"	24	Company subsidized by District Board.
10. Dholpur State.	Indian State	Dholpur State	2'-6"	55	Indian State.
11. Futwah-Islampur.	Futwah - Islampur Light Rly. Co.	Futwah-Islampur†	2'-6"	27	Branch Line Company under guarantee terms.
12. Howrah Amta Light.	Howrah-Amta Light Rly. Co.	Howrah-Amta Light	2'-0"	44	Company subsidized by District Board.
13. Howrah Sheakhala Light.	Howrah-Sheakhala Light Rly. Co.	Howrah-Sheakhala Light	2'-0"	20	Ditto.
14. Jagadhri Light.	Jagadhri Light Rly. Co.	Jagadhri Light	2'-0"	3	Unassisted Company.
15. Kalighat Falta.	Kalighat Falta Rly. Co.	Kalighat-Falta†	2'-6"	26	Branch Line Company under guarantee terms.
16. Rajasthan State.	Indian State	Rajasthan State	3'-3½"	179	Indian State.
17. Scindia State.	Indian State	Scindia State	2'-0"	294	Ditto.
18. Tezapore Balipara Light.	Tezapore Balipara Light Rly. Co.	Tezapore-Balipara Light	2'-6"	20	Company subsidized by District Board.‡

\* Please see footnote "\*" on page 101.

† Guaranteed by the Government of India.

‡ Subsidy ceased with effect from 1914-5.

## Books and Technical Papers published by the Railway Board.

## BOOKS

(1) Report by the Railway Board on Indian Railways Published yearly, Price. Volume I—Report, Rs 5-2-0 or 8sh. Volume II, Rs 14-0-0 or 22sh. (1947-8).

(2) Classified List of Establishment of Indian Government Railways and Distribution Return of Establishment of all Railways corrected up to 31 December 1948 Price Rs. 11-6-0

(3) History of Indian Railways, constructed and in progress corrected up to 31 March 1945 Published sexennially. Price Rs 3-2-0 or 14sh 6d

## TECHNICAL PAPERS.

(4) Over 314 papers have been published by the Technical Section of the Railway Board's Office. The papers comprise:—

- (a) Original descriptions of railway works and studies of railway problems in India and elsewhere
- (b) Reprints of articles from foreign engineering magazines
- (c) Reprints or abstracts of reports received by the Government of India on subjects connected with railways

A complete list of the papers can be obtained gratis from the Chief Controller, Standardisation, Central Standards Office for Railways, New Delhi. A few of the more important Technical papers are mentioned below:—

Technical Paper.	Name.	Author
No 72	The design of well foundations for bridges . . . .	(Compiled)
" 148	Statistics of Railway working expenditure . . . .	G DEUCHARS
" 153	River training and control on the guide bank system . . . .	F J E. SPRING
" 215.	The Harding Bridge over the Lower Ganges at Sara . . . .	SIR ROBERT GALES
" 219	Technical education in relation to railways in America . . . .	H. L. COLE
" 239	The Central Control systems for the scheduling of operations in locomotive repairs workshops in England . . . .	H H SAUNDERS
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" 245	Report of the Indian Railway Bridge Committee on track stresses . . . .	
" 247.	1st and 2nd Interim reports of the Indian Railway Bridge Committee on Impact and Revision of the Bridge rules . . . .	
" 249	Operating Statistics and the Divisional Officer . . . .	MAJOR F H BUDDEN
" 250	Axle-loads, Wheel Diameter and railheads dimensions . . . .	
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	Description of the planning, Progress, Coalings and Engine Repairs, Schedule System introduced to the G I P Railway Loco Shops at Parel . . . .	F G S MARTIN
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" 281	The Belt System of Repairs introduced in the Loco Workshops at Kanchrapara . . . .	R. DE VERAIRWIN AND J R POTTER
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